Posttraumatic Stress in California's Workers' Compensation System

A Study of Mental Health Presumptions for Firefighters and Peace Officers Under Senate Bill 542

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About This Report

This report describes work undertaken by the RAND Corporation for the California Commission on Health and Safety and Workers' Compensation (CHSWC) in the Department of Industrial Relations (DIR). The goal of this study is to evaluate mental health conditions or illnesses among California's firefighters and peace officers to inform the policy debate surrounding the rebuttable presumption that posttraumatic stress disorder (PTSD) among first responders is work-related and thus eligible for full workers' compensation benefits. The main tasks of the mixed-methods evaluation are to (1) produce prevalence estimates and conduct claims analysis and cost estimations and (2) document the experiences of firefighters and peace officers seeking mental health care in the workers' compensation system and capture the perspectives of mental health providers, claims administrators, and department leaders in urban and rural departments across Northern and Southern California. This research builds directly on a number of past RAND studies for DIR and CHSWC, including several recent studies on workers' compensation issues primarily affecting firefighters, peace officers, and other public safety workers. Although this study focused on California, our findings may be of interest to state policymakers throughout the country who are considering adoption of, or modifications to, laws establishing similar mental health presumptions for public safety workers.

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Summary

The incidence of mental health and suicide among firefighters and peace officers (who we refer to collectively as "first responders") is increasingly recognized as a public health crisis. Mental health conditions and suicide exact an unacceptable burden on these workers and their communities while undermining the mission of public safety agencies, both in California and throughout the United States. The enactment, in 2019, of Senate Bill 542, represented a major step toward promoting first responders' access to the California workers' compensation system for mental health conditions. SB 542 established a rebuttable presumption that posttraumatic stress disorder (PTSD) among first responders is work-related and thus eligible for full workers' compensation benefits.

At the time when SB 542 was enacted, policymakers had to proceed without the benefit of rigorous research on the incidence of PTSD and mental health conditions among California firefighters and peace officers, especially in comparison with other workers. Assemblymember Tom Daly accordingly requested that the Commission on Health and Safety and Workers' Compensation (CHSWC) examine these issues to guide future policymaking. This report, which CHSWC commissioned from RAND, uses a mixed-methods approach to address a range of questions about the mental health of first responders who are covered by SB 542 and how those with mental health conditions were treated in the workers' compensation system prior to SB 542. Selected key findings and recommendations are presented, along with priorities for future research and evaluation. Before turning to our findings, however, we will provide background on California's workers' compensation system, the pre-SB 542 status quo for mental health conditions in workers' compensation, and the rationale for SB 542.

Background on First Responders' Mental Health and Presumptions in California's Workers' Compensation System

The California workers' compensation system requires employers to provide medical care and indemnity (cash) benefits to workers who experience job-related injuries or illnesses, defined to include injuries "arising out of and in the course of the employment" (Labor Code Section 3600[a]). For most injuries, the bar for establishing compensability is relatively low: employment must be a "contributing cause" of the injury and need not be the sole or primary cause (CHSWC, 2004). For psychiatric injuries without an accompanying physical injury, however, section 3208.3 of the Labor Code establishes a much higher evidentiary bar. In most circumstances, this standard is that "actual events of employment" were the "predominant" cause of the psychiatric injury. The higher standard of evidence required for psychiatric injuries to be compensable controlled medicolegal costs by reducing the volume of psychiatric injury claims and related examinations. Raising the standard of

evidence also reduces workers' access to financial compensation and medical care for psychiatric injuries, however. The value of cost savings that accrue to the workers' compensation system must be weighed carefully against the impact on workers.

Against this backdrop, concern has grown about access to workers' compensation for the psychiatric injuries of first responders—specifically firefighters and peace officers—suffering from PTSD. Public attention to the psychiatric burden borne by these first responders has been crystallized by a series of high-profile disasters, such as the large-scale mass shootings in San Bernardino and Las Vegas and the unprecedentedly large and intense wildfires that have become common in recent years. Attention has also been drawn to these mental health challenges by estimates indicating that, nationwide, more police officers and firefighters have died in recent years by suicide than in the line of duty.

In 2019, California enacted SB 542, which added section 3212.15 to the Labor Code, creating a rebuttable presumption that PTSD in firefighters and peace officers is a work-related injury and thus compensable under workers' compensation. In effect, the law shifts the burden of proof from workers (who must show that an injury or illness is work-related to receive benefits) to employers (who must show that an injury or illness is *not* work-related to deny a claim). California has long used presumptions to facilitate workers' compensation claims for many other occupational health conditions in first responders. These other presumption-covered conditions include cancer, heart trouble, and hernia. SB 542 is intended to encourage care-seeking among first responders and reduce the stigma associated with filing a workers' compensation claim for a mental health condition. The presumption is in effect for injuries occurring between January 1, 2020, and December 31, 2024.

Overview of the Study

This evaluation study aims to provide evidence on the incidence of mental health conditions and illnesses among firefighters and peace officers and then to discuss the implications this evidence has for policy regarding presumptions established by SB 542. As noted by Assemblymember Daly shortly after the bill's passage, there were major evidence gaps related to how PTSD prevalence varies across occupations, how PTSD and other mental health conditions were being handled in the workers' compensation system, and how the bill potentially affects costs to state and local government.

CHSWC posed 12 specific research questions addressing a wide range of issues, which we list in full in Chapter 1. We then provide concise question-by-question answers in the summaries of each chapter. To address these questions, we took a mixed-methods approach, combining a quantitative analysis of survey and administrative data sets with the experiences of those using the workers' compensation system for treatment of job-related mental health injuries and conditions. These experiences were gathered through over 50 semistructured interviews with a sample of relevant stakeholders from across California: department chiefs or commanders; claims administrators; mental health providers; applicants' attorneys; and, most important, first

responders who had suffered from work-related mental health conditions. We also convened a technical advisory group (TAG) containing various stakeholders and experts to gather input on study design (in October 2020) and on preliminary results (in May 2021). A full accounting of the research methods employed in this project is provided in Chapter 2 and in Appendixes B and C. In this summary, we focus on a selection of the most novel and relevant findings, discussing policy implications and future research needs.

Major Findings

This section reports selected major findings from the study. CHSWC posed 12 distinct research questions to RAND, and the body of this report groups these questions thematically. Direct answers to CHSWC's 12 questions are presented in the chapter summaries and in full in Appendix A.

This report uncovered numerous challenges with the way the workers' compensation system functions for workers with mental health conditions. Some of these challenges created barriers that deterred first responders from accessing care for PTSD. It is plausible that the presumption in SB 542 could help address some of these challenges.

SB 542 is likely to reduce the denials of PTSD claims in comparison with other presumption-covered conditions, but to what extent remains to be seen. Issues with documenting traumatic incidents that cause denials and delays may also become less widespread with a presumption in place. Finally, it is conceivable that a reduced threat of denials will encourage more people to come forward.

This research also found that SB 542 could be costly to state and local government, although cost estimates vary widely due to uncertainty about the true incidence of PTSD. Findings on the major themes that emerged in this report follow.

Mental Distress and Suicide Among First Responders

To estimate the prevalence of mental health conditions and suicidality in California's first responder workforce, we analyzed seven years (2013–2019) of data from the California Health Interview Survey (CHIS). The CHIS is a confidential household survey conducted by the UCLA Center for Health Policy Research, and it is designed to produce estimates that are representative of the California population. While we were not able to measure the prevalence or incidence of PTSD due to data limitations, evidence on the occupation-specific prevalence of serious mental distress (a pattern of symptoms that is predictive of having a diagnosable mental disorder) and moderate mental distress (a pattern of symptoms that indicates someone is likely to benefit from mental health care) may be of interest to policymakers. Subject to limitations (discussed further below), this analysis found the following:

- Representative survey data from California did not show that mental distress or suicidality is more prevalent among California's first responders than among workers in other occupations who are exposed to trauma on the job.
- Between 2013 and 2019, 1.2 percent of firefighters and 1.3 percent of peace officers had experienced serious mental distress over the past year; these rates are slightly lower than, but not statistically distinguishable from, those of workers in similar trauma-exposed occupations. For the California workforce as a whole, the prevalence of serious mental distress was 3.6 percent.
- In California, 2.7 percent of firefighters and 4.9 percent of peace officers reported having seriously considered suicide, but these rates were statistically significantly lower than rates in other occupations. For the California workforce as a whole, the lifetime prevalence of suicidal ideation was 10.6 percent.

Our analysis had limitations. We were not able to directly measure PTSD or suicide rates within the scope of this study. We also cannot rule out the possibility that differences in mental health stigma across occupations affect these estimates, despite the use of confidential survey data. We were also unable to obtain data on the incidence (i.e., the rate of new onset in previously unafflicted people) of mental health conditions among workers in California, so we instead documented the prevalence (i.e., the stock of people currently experiencing symptoms) of mental distress and suicidality. Finally, we heard in our interviews that preemployment screening and training, along with self-selection of more resilient workers into peace officer and firefighter careers, should lead to better baseline levels of mental health and higher levels of psychological resilience compared with those in other occupations; as such, a *healthy worker effect* could lead to a lower baseline prevalence of mental health conditions that might obscure the harmful impacts of workplace exposure to traumatic events for first responders.

Claims Involving PTSD in the Workers' Compensation System

To understand how PTSD and other mental health claims are handled in California's workers' compensation system, we analyzed administrative data from the Workers' Compensation Information System (WCIS), a comprehensive database of workers' compensation claims managed by the state. We analyzed data in 12 years (2008–2019) of injury claims filed before SB 542 took effect, to establish some basic facts about the pre-SB 542 status quo in California.

Frequency of Claims Involving PTSD by Occupation

Claims filed by firefighters and peace officers are more likely to involve PTSD—that is, they are more likely to have one or more medical bills with a principal diagnosis of PTSD—than are claims filed by the average worker in California. More specifically, rates of PTSD claims are 0.7 percent for peace officers, 0.9 percent for firefighters, and 0.4 percent for the average worker in California.

Claim Denial Rates

We also examined claim denial rates, by occupation, for claims involving PTSD, other mental health conditions, and other conditions covered by presumptions, which resulted in the following findings:

- About a quarter of first responder claims involving PTSD are initially denied, either during the investigation stage or prior to the payment of indemnity benefits.
- For firefighters, 24 percent of claims involving PTSD are initially denied; for peace officers, 27 percent are initially denied.
- These denial rates are more than twice as high as those observed for other presumption conditions among first responders, although more severe and higher-cost presumption conditions, such as cancer and heart disease, had claim denial rates that were closer to (but still below) those observed for claims involving PTSD.
- The initial denial rates for the PTSD- and mental health-related claims of first responders were statistically significantly higher than the denial rates of PTSD-related claims filed by workers in most trauma-exposed occupations. For all claims in the workers' compensation system involving PTSD, the initial denial rate was 19 percent, compared with 26 percent among first responders.

We do not know yet what denial rates for claims involving PTSD will be under SB 542, as these estimates reflect the status quo prior to SB 542. That said, comparison with other presumption conditions does suggest that the presumption created by SB 542 will reduce the frequency of denials on first responder claims involving PTSD.

Proving Job-Relatedness in Mental Health Claims

We consulted with mental health professionals to understand whether it is feasible to prove that a first responder's PTSD is job-related. Mental health providers who treat first responders felt that it often is feasible to prove that a mental health condition is job-related for first responders and cited a number of reasons, which we discuss in Chapter 5. These interviews also identified barriers that contributed to potentially avoidable claim denials:

- First responders can be slow to seek care, and those who file claims well after their injury or mental health treatment might be denied even if they are, in fact, within the statutory timelines.
- Challenges with documentation created another barrier to first responders meeting the evidentiary standards in place before SB 542. This view was echoed by claims administrators and applicants' attorneys.

Access to Mental Health Care for First Responders

We also used interviews to explore how first responders access mental health care for work-related trauma exposure, whether through workers' compensation or other avenues, and noted the following:

- Although nearly all workers filed a workers' compensation claim for their mental health condition(s), almost none received PTSD care paid for by workers' compensation.
- Half of the first responders we interviewed sought mental health care for work-related trauma exposure through workers' compensation after filing a claim; however, all but one of the filed claims were initially denied, which delayed the start of their mental health treatment and slowed their recovery process.
- The other half of the first responders we interviewed sought care before filing a claim and then also experienced initial denials, causing them financial stress and other difficulties once they were able to return to work.
- The first responders we interviewed generally did not seek mental health treatment for work-related trauma exposure through employer-sponsored insurance (ESI) or other health care coverage, as mental health providers who billed ESI companies for work-related claims would have those claims denied and redirected to workers' compensation.
- Employee Assistance Programs (EAPs) were also viewed as ineffective by the first responders who used them to address traumatic stress; others avoided EAPs entirely due to inadequate guarantees of confidentiality.
- First responders emphasized the need for culturally competent mental health providers who understood the realities and exceptional demands of their work, but first responders also reported little to no success accessing culturally competent mental health providers though EAPs, workers' compensation Medical Provider Networks (MPNs), or ESI. As a result, nearly all the first responders we interviewed paid for their PTSD care from culturally competent mental health providers entirely out-of-pocket, which caused severe financial strain in some cases.
- Consistent with prior evidence, mental health stigma and a fear of professional consequences were identified as major barriers to care-seeking. All first responders interviewed indicated that their departments did not have the necessary behavioral health support and provided insights into the needed changes and improvements.
- Several departments we spoke with had contracted directly with culturally competent mental health providers to supply more immediately accessible care to first responders while bypassing the claims processes and network limitations associated with workers' compensation, EAPs, or ESI plans. Department chiefs and some first responders indicated that this model was working well, but further study is needed to systematically evaluate the benefits and costs of this approach.

Cost Impacts of SB 542's Presumptions for PTSD

CHSWC asked us to estimate the cost of the presumption created by SB 542 (as enacted) to state and local governments in California, in addition to the cost of a proposed (but not enacted) retroactive presumption that would have applied to injury dates between 2017 and 2019. To analyze the costs associated with SB 542, we assumed that the presumption would operate by changing two key determinants of workers' compensation costs: the probability that first responders diagnosed with PTSD file a claim and the probability that claims involving PTSD were initially denied. These channels would tend to increase costs if claim volumes increase and if claim denials result in lower benefit payments—an assumption that is consistent with our analysis of claims data.

Lack of data on the true PTSD incidence rate required us to estimate costs based on a wide range of assumptions and scenarios, contributing to the uncertainty of our estimates. Notwithstanding these limitations, our analysis indicated that SB 542 could lead to substantial increases in the volume of PTSD-related mental health claims made by first responders, albeit from a very low baseline. Subject to the caveat that the estimates in this report are subject to a wide range of uncertainty, we found the following:

- For more recent years (2016–2019), we estimate the yearly statewide number of claims involving PTSD before SB 542 to be 82 for firefighters and 171 for peace officers.
- Claims involving PTSD are costly in comparison with the average workers' compensation claim. On average, paid benefits, medical care, and settlements on first responder claims involving PTSD from 2008 to 2019 totaled $63,049 in inflation-adjusted 2020 dollars; most of these costs were for indemnity (temporary and permanent disability) benefits rather than for medical care, underscoring that PTSD can lead to substantial work disability and income loss for first responders. For comparison, the average cost of paid benefits for all first responders' workers' compensation claims was $14,076.
- In the five years from 2020 to 2024, under an assumption of high PTSD incidence rates (comparable to rates of those deployed in Iraq and Afghanistan) with intermediate assumptions about the impact of SB 542 on claiming behavior and denial rates, the average yearly cost that state and local governments paid for PTSD-related claims increased: For injuries incurred in 2020 or later, costs were estimated as going from $14 million to $95 million per year for peace officers and from $6 million to $21 million per year for firefighters,.
- We caution that the range of uncertainty was extremely wide: Plausible assumptions about incidence rates and behavioral responses could result in average yearly costs to state and local governments over the 2020–2024 period, ranging from $38 million to $179 million for peace officers and from $10 million to $168 million for firefighters.
- We also estimated the potential costs that might result if SB 542 were made retroactive for injury dates occurring in the 2017–2019 period. Under intermediate assumptions about filing behavior and other behavioral responses, we estimate that retrospective costs would be $66 million for peace officers and $13 million for firefighters.
- We note that these cost estimates reflect the cost of benefits, but they do not account for potential budgetary savings to departments, which might result from reduced absenteeism, disability leave, retirement benefits, or turnover and training costs associated with the loss of mid- or late-career personnel. Better estimates of these potential cost offsets are needed before a complete cost-benefit evaluation of SB 542 can be undertaken.

Recommendations

The trade-offs between the additional costs imposed by SB 542 and the potential benefits—in terms of the readiness of public safety agencies, budgetary savings from improved mental health, and the reduced suffering of first responders and their families—are complex and could not be fully characterized within the scope of this study. We therefore cannot provide policymakers

with a firm yes-or-no recommendation on whether California should extend the presumption established by SB 542 in 2025: that calculus falls into the realm of policymaking, not research. The research process did, however, illuminate gaps in the evidence base and issues for policymakers to consider when contemplating the future of the presumption. It also highlighted policy opportunities beyond the workers' compensation system that may advance the broader purposes of SB 542.

Filling Knowledge Gaps

To solidify the evidentiary base for future deliberations on SB 542, further research is required. Such research would allow for a more precise estimation of the presumption's effectiveness.

- It would be valuable for California to revisit the questions examined in this study at some future time that is closer to the expiration of the SB 542 presumption—perhaps in 2023. That would allow analysis of the system after the COVID-19 pandemic has (we hope) receded and after the workers' compensation system, departments, and first responders have been able to adjust to the new status quo under SB 542. A retrospective evaluation closer to the expiration of SB 542 would be particularly important for providing direct evidence on
  - mental health care-seeking patterns for first responders
  - claim denial rates for mental health illnesses and conditions among first responders
  - mental health claim costs for first responders with the presumption in place.
- Future qualitative investigation could also examine whether, as hoped by the legislature, SB 542 succeeded in reducing mental health stigma among first responders or promoting other changes in department culture. It would also be possible, after SB 542 has been in place for several years, to conduct a representative survey of first responders to document their awareness of the law—and, for those who filed mental health claims, to document whether knowledge of the presumption or other factors affected their decision to file or to seek mental health care for work-related trauma.
- Cost impacts of PTSD associated with first responder turnover, training, or early retirement could not be modeled in the scope of this study; an *ex post* evaluation could be scoped to measure these impacts and quantify their implications for the net costs of SB 542.
- More information is needed about what details and evidence are specifically requested by claims administrators (and a qualified medical examiner [QME] and an agreed medical evaluator [AME]) handling claims involving PTSD during the 90-day investigation period and possibly over the course of the claim.
- CHSWC may want to more carefully examine the availability of mental health providers within MPNs and explore ways to provide first responders with a wider choice of culturally competent mental health providers that are willing to accept workers' compensation patients.

Rethinking Occupational Mental Health Care for First Responders and Other Trauma-Exposed Workers

We also identified a number of findings that fell outside the scope of the specific questions posed by CHSWC, but these findings should nonetheless be considered by policymakers concerned about the well-being of firefighters and peace officers or those concerned about occupational mental health among other groups of trauma-exposed workers.

Firefighters and Peace Officers

The ultimate goal of SB 542 was not just to provide workers' compensation benefits to first responders; the legislature enacted SB 542 in the hope that, by reducing stigma and promoting workers' compensation claims, first responders suffering from posttraumatic stress would be more likely to receive high-quality care when it was needed, before untreated PTSD resulted in permanent disability, early retirement, or suicide. SB 542 seems likely to facilitate workers' compensation claims. It is far from clear, however, whether the workers' compensation system is indeed the best possible system for delivering mental health care to first responders with work-related trauma exposure.

It is entirely possible that SB 542 will succeed in destigmatizing mental health and ensuring fair and rapid disability compensation to first responders with PTSD, but it is also possible that first responders suffering from PTSD will continue to struggle with finding culturally competent mental health providers and timely mental health care, relying instead on a mix of self-pay care and, in some departments, direct care provision. Policymakers concerned with the mental health and readiness of first responders might wish to start building the evidence base needed to establish a better-integrated system for the delivery and financing of mental health care for first responders and work-related trauma exposure.

Beyond the workers' compensation system, our interview findings suggested there may be serious problems with the broader mental health care delivery and financing system available to first responders. The workers we interviewed did not find EAP care helpful for PTSD, due both to the providers available and to relatively low visit limits. These findings, if substantiated by future research, might urge departments to redesign EAPs or to follow some of the departments in our sample by contracting directly with culturally competent mental health providers. More work is needed to substantiate the concerns raised by our interview subjects, however.

We would also caution that piecemeal improvements to EAPs, ESI, or workers' compensation may not be sufficient to get first responders with PTSD the care they need when they need it. Direct care provision—effectively bypassing the existing EAP, ESI, and workers' compensation programs—is an intriguing model that several departments have used to fill these gaps in mental health care provision for work-related trauma exposure. Department experiences with the direct provision of mental health care are described in Chapter 6. Yet, essentially nothing is known about the costs and benefits of such a direct care model for mental health in first responders or about how widespread this practice is. A useful first step would be to survey

departments and ask how many are sidestepping workers' compensation by providing direct mental health care for work-related trauma exposure.

More broadly, policymakers, departments, labor unions, and providers should be consulted to identify and evaluate various avenues for improving access to mental health treatment for first responders—avenues that also focus on providing treatment more quickly (such as contractual agreements with unions, departments, and cities).

Another issue worth considering, which was not raised by departments in our study, was whether workers' compensation carve-out arrangements—which are common in California's public safety agencies—in conjunction with more serious attention to the composition of mental health provider networks in group health, could help reduce the fragmentation of payers that was so deleterious to first responders with PTSD.

Other Trauma-Exposed Occupations

Although firefighters and peace officers covered by the presumption in SB 542 were the central focus of this study, we also uncovered alarmingly high rates of mental distress and suicidality in several comparison occupations not covered by the PTSD presumption, including EMTs, ambulance drivers, and private-sector security guards. For a number of reasons, including differences in preemployment screening and the healthy worker effect (as discussed above), the evidence presented here does not tell us if the worse mental health in these occupations is due to workplace exposures or if presumptions should be expanded to these other occupations.

Instead, we view these findings as a call for researchers and policymakers to consider the mental health impacts of occupational trauma exposures and working conditions across a much wider set of occupations and industries. It also seems likely that many of the serious problems in the mental health care delivery system, which were raised in our interviews with first responders, also apply to these other groups of workers, who generally receive lower pay, have higher turnover, and are less likely to be unionized than the first responders examined in the present study.

To facilitate evidence-based policymaking in this area, California policymakers might consider providing funding for the CHIS to add a validated questionnaire specifically measuring PTSD (e.g., the PTSD checklist [called the PCL]). Questionnaire items to measure mental health stigma have been developed in survey reporting, and their addition to the CHIS could support more informative comparisons across occupations that may have differing levels of stigma. More generally, state policymakers might benefit from a more systematic approach to determining when presumptions are warranted and in which occupations. This question has become increasingly relevant with the establishment, in 2020, of a presumption for COVID-19, which covers a much wider set of occupations and industries.

Abbreviations

AME	agreed medical examiner
AOE/COE	arising out of employment or course of employment
CDC	Centers for Disease Control and Prevention
CHIS	California Health Interview Survey
CHSWC	Commission on Health and Safety and Workers' Compensation
CPI-U	Consumer Price Index for All Urban Consumers
DIR	(California) Department of Industrial Relations
DWC	Division of Workers' Compensation
FROI	First Reports of Injury
MRSA	methicillin-resistant Staphylococcus aureus
NCS	National Comorbidity Survey
NHIS	National Health Interview Survey
NVDRS	National Violent Death Reporting System
PD	permanent disability
PTSD	posttraumatic stress disorder
QME	qualified medical examiner
SB	Senate Bill
SOC	Standard Occupational Classification
SROI	Subsequent Reports of Injury
TAG	technical advisory group
TD	temporary disability
TPA	third-party administered
WCIS	Workers' Compensation Information System

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1. Introduction

The incidence of mental health conditions and suicide among firefighters and peace officers (whom we refer to collectively as "first responders") who are exposed to traumatic events in the line of duty is increasingly recognized as a public health crisis. The 2019 enactment of Senate Bill (SB) 542 established a rebuttable presumption that posttraumatic stress disorder (PTSD) among first responders is work-related and thus eligible for full workers' compensation benefits.

To help inform future deliberations over this policy, the Commission on Health and Safety and Workers' Compensation (CHSWC) asked the RAND Corporation to conduct a study on the *Incidence of Mental Health Conditions or Illnesses Among Firefighters and Peace Officers*. The goals of the study were the following:

- Gain insight into how firefighters and peace officers are treated by the workers' compensation system through interviews with first responders, mental health providers, applicants' attorneys, claims administrators, and chiefs at fire and peace officer departments across California.
- Assess the prevalence of mental health conditions among active firefighters and peace officers and compare first responders' experiences with those of others exposed to traumatic events on the job.
- Study the frequency of workers' compensation claims involving PTSD and other mental health conditions, and describe claim outcomes, including denials and benefit payments.
- Estimate the additional costs that state and local governments should anticipate as a result of the presumption established by SB 542.

To achieve these study goals, we conducted a mixed-methods evaluation, combining a number of quantitative and qualitative research tasks. Quantitative analyses included the use of household survey data to estimate the prevalence of mental distress and suicidality by occupation for workers in California. It also includes analysis of workers' compensation claims data, to study claim frequency and outcomes in the workers' compensation system for workers with mental health conditions. Qualitative methods included a series of semistructured in-depth interviews centered on a sample of fire departments and peace officer organizations (police departments or sheriff's offices). The samples were chosen to reflect the geographic diversity within California and variations in the frequency of mental health claims and claim denials. Stakeholder types interviewed included department chiefs, claims administrators, mental health providers who serve first responders, and applicants' attorneys (who represent injured workers in the workers' compensation system); but most important, we recruited and interviewed first responders who had suffered from work-related mental health conditions to learn about their experiences in seeking mental health care and pursuing workers' compensation claims. Finally, we convened a technical advisory group (TAG) to provide input on our study design and feedback on the preliminary results.

Research Questions

At the time when SB 542 was enacted, policymakers had to proceed without the benefit of rigorous evidence on the incidence of PTSD and mental health conditions among California firefighters and peace officers, especially in comparison with that of other workers. Systematic evidence about claim denial rates and access to mental health care and benefits was likewise unavailable. There was also significant uncertainty about the impact of SB 542 on costs for state and local government.

CHSWC requested that RAND answer 12 research questions initially posed in a letter written by Assemblymember Tom Daly, shortly after the passage of SB 542. These questions cover a wide range of topics related to differences in mental health and suicide risk across occupations, claim outcomes in the workers' compensation system, and costs to state and local governments. The questions, which we numbered for reference throughout the report, are as follows:

- RQ1: Do firefighters and peace officers have a higher incidence of traumatic stress injuries than non-public employees which pose similar exposure to traumatic stress, such as emergency room personnel, security guards, or private ambulance service employees?
- RQ2: Do firefighters and peace officers experience a significantly higher incidence of suicide, attempted suicide or other serious mental health conditions than other employees generally?
- RQ3: Are claims by firefighters and peace officers for mental health conditions denied under circumstances where the condition appears to be job-related but the employee has/d difficulty proving that fact, and is/was the rate of denial statistically different from other claims by firefighters (or peace officers) that are subject to presumptions of compensability? NOTE: As part of the response to this question, the contractor should analyze the denial rates of claims subject to presumptions of compensability, whether denial rates are different based upon the entity adjusting the claims (third-party administered [TPA], self-administered, or insured) and describe the ultimate disposition of denied claims, either upheld or reversed.
- RQ4: Do firefighters and peace officers file claims for mental health conditions at a rate statistically different from other employees?
- RQ5: Are claims by firefighters and peace officers for mental health conditions denied under circumstances where the condition appears to be job-related, but the employee has difficulty proving that fact, and is the rate of denial statistically significantly different from other claims and from other types of employees?
- RQ6: In addition to quantifying data requested in number 4, above, please consult with the professional mental health community to determine the feasibility of proving or disproving the job-relatedness of these mental health conditions.
- RQ7: To the extent that claims for mental health conditions filed by firefighters (or peace officers) are being denied by employers, is this occurring following prior treatment that was covered by employer-sponsored or other health care coverage, where the treating provider(s) concluded the condition was job-related, or in cases where there was no prior treatment or diagnosis?

- RQ8: Of the claims that involve mental health conditions, what percentage of these claims were primarily for mental health issues, and what percentage of these claims involved a mental health claim as a compensable consequence to a claim for physical injuries?
- RQ9: To what extent are mental health claims filed by public safety officers post-separation/termination claims, as opposed to claims for which the employer had notice during the term of employment?
- RQ10: In the case of denied workers' compensation claims by firefighters and peace officers for mental health conditions, is there evidence that the claimant later sought and obtained care through employer-sponsored or other health care coverage?
- RQ11: What might the costs to state and local governments be for each of the next five years now that SB 542 is in effect? Please separate out firefighter and peace officer estimated costs.
- RQ12: What would the costs to state and local governments be that are associated with the retroactive application of the rules set forth in SB 542? Please separate out firefighter and peace officer estimated costs.

While we chose to organize our research report by theme, rather than following the ordering of the research questions, each of these research questions is addressed in this report; a question-by-question summary of our research findings is presented in the summary sections of each chapter and also in full in Appendix A.

Organization of This Report

Chapter 2 provides background information and policy evidence from California on PTSD among firefighters and peace officers and gives the legislative history and background of SB 542 and its implementation timeline. Chapter 2 also describes RAND's overall study design and mixed-methods approach, lays out the research questions, and provides an overview of the qualitative data collection and quantitative data sources.

Chapter 3 presents past and current evidence on posttraumatic stress and suicide among first responders. We provide information on the types of traumas and symptoms experienced by firefighters and peace officers, both from their own perspectives and from the perspectives of applicants' attorneys, mental health providers, and stakeholders who work within and support fire and police departments (i.e., chiefs and claims administrators). Chapter 3 also describes estimates of the prevalence of mental health conditions for first responders, using the California Health Interview Survey (CHIS) and the National Health Interview Survey (NHIS) (**RQ1**) and shows the prevalence estimates of suicidal ideation by occupation (**RQ2**).

Chapter 4 describes the processes and outcomes of mental health claims. Drawing from a review of the rules and regulations pertaining to filing workers' compensation claims and from discussions with the California Department of Industrial Relations (DIR) staff, we lay out an overview of the workers' compensation claims-filing process and its associated timelines. This overview aims to delineate the mechanics and timelines involved in filing and processing

workers' compensation claims within the larger workers' compensation system. We discuss the types of mental health claims filed by first responders (**RQ8**), the rate of claims filed for mental health conditions (**RQ4**), and the associated claims outcomes (**RQ9**). We also present information on the types of claims filed, the reasons for delay, the initial denials, and the final statuses of mental health claims; this information is based on the experiences of both the first responders who have filed mental health claims and the applicant attorneys representing claims from first responders. We also discuss experiences with claim delays, denials, and approvals from the perspectives of mental health providers and stakeholders who work within and support fire and police departments (i.e., chiefs and claims administrators). Using 12 years of workers' compensation information-system claims data, we describe the types of claims filed by first responders as well as the initial and final claims outcomes.

Chapter 5 discusses the issues involved in proving the job-relatedness of the mental health conditions that first responders file claims for. We first describe the perspectives of mental health professionals regarding the feasibility of proving or disproving the job-relatedness of mental health conditions (**RQ6**). We then present the perspectives of both claims administrators and applicants' attorneys regarding what is needed to establish the job-relatedness of mental health conditions for first responders. We conclude by integrating this information with the information in Chapter 4, which discusses the ultimate disposition of denied-claims outcomes (i.e., either upheld or reversed) and how that relates to characteristics of the entity adjusting the claim (i.e., self-administered or third party-administered) (**RQ3**). We also compare claim frequency and denial rates to those of claims for other conditions covered by presumptions, addressing research question 5 (**RQ5**).

Chapter 6 discusses the access and timing of mental health treatment for first responders, including the types of mental health treatment sought, the mental health resources provided by fire and police departments, and the avenues taken to seek and gain mental health treatment for traumas exposed on the job. We provide first responder perspectives on the barriers to seeking treatment and the differences in gaining access to and paying for mental health treatment both within and outside the workers' compensation system, including through Employee Assistance Programs (EAPs) and Employer-Sponsored Health Insurance (ESI) (**RQ10**). We also discuss the timing and sources of mental health treatment as it relates to claim denials and provide data from the WCIS regarding medical billing for mental health claims by first responders (**RQ7**).

Chapter 7 reports estimates of the indemnity, settlement, and medical costs associated with claims involving PTSD. We used these estimates, along with assumptions informed by our analyses and the research literature, to project the potential costs of SB 542 to state and local governments each year, from 2020 to 2024 (**RQ11**). We also calculated the potential costs that would result from making the PTSD presumption retroactive to 2017–2019 injury dates, as proposed in the initial draft of SB 542 (**RQ12**).

Chapter 8 describes the perspectives of mental health providers, claims administrators, and department chiefs regarding the need for SB 542 and its potential impacts on care-seeking,

mental health claim volume, and cost. We also present stakeholder perspectives on how to improve first responders' access to mental health providers and on general improvements to the workers' compensation system as it relates to mental health conditions and claims.

Chapter 9 concludes by recapping the problem, discussing the results laid out in the preceding chapters, and pointing to areas where future research is needed. We also suggest potential improvements to the workers' compensation system in relation to mental health conditions and claims.

Table 1.1 shows which of the research questions above are addressed in which chapters.

Table 1.1. Research Questions Addressed by Chapter

Chapter	Research Question
1: Introduction	None
2: Background and Overview of the Study	Enumerates research questions
3: Posttraumatic Stress, PTSD, and Suicide Among First Responders	RQ1, RQ2
4: First Responders' Mental Health Claims	RQ3, RQ4, RQ5, RQ8, RQ9
5: Proving the Job-Relatedness of Mental Health Claims	RQ3, RQ5, RQ6
6: The Access and Timing of Mental Health Care for First Responders	RQ7, RQ10
7: Costs Related to Senate Bill 542	RQ11, RQ12
8: Perspectives on Senate Bill 542	None
9: Discussion and Conclusion	Synthesizes research questions

2. Background and Overview of Study

This chapter provides background information and policy evidence regarding PTSD among firefighters and peace officers. We describe the legislative history and background of SB 542 and its implementation timeline. We also describe RAND's overall study design and mixed-methods approach, laying out the research questions and providing an overview of the qualitative data collection and quantitative data sources.

Policy Background and Evidence from California

California's workers' compensation system requires employers to provide medical payments and cash indemnity benefits to workers who experience job-related injuries or illnesses, defined to include injuries "arising out of and in the course of the employment" (Labor Code § 3600[a]). For most injuries, the bar for establishing compensability is relatively low: Employment must be a "substantial contributing cause" of the injury and not the sole or primary cause (California Commission on Safety and Workers' Compensation, 2004). For psychiatric injuries without an accompanying physical injury, however, section 3208.3 of the Labor Code establishes a much higher evidentiary bar, requiring that "actual events of employment" were the "predominant" cause of the psychiatric injury. A lower standard ("substantial cause") applies in the event when the worker is "a victim of a violent act or from direct exposure to a significant violent act." For injuries occurring in 2013 or later, SB 863 also restricted permanent disability compensation for "add-on" psychiatric injuries that were secondary to physical injury. The higher standard of evidence required for psychiatric injuries to be compensable, which was originally adopted in 1989 as part of the Margolin-Bill Greene Workers' Compensation Act of 1989, succeeded in controlling medicolegal costs by reducing the volume of psychiatric injury claims and related examinations (California Department of Industrial Relations, 1997). Raising the standard of evidence necessarily reduces workers' access to financial compensation and medical care for psychiatric injuries, but the value of this in terms of cost savings to the workers' compensation system must be weighed carefully against the impact on workers.

In recent years, concern about access to workers' compensation for psychiatric injuries has grown in the context of first responders—specifically, firefighters and peace officers suffering from PTSD. While firefighting and law enforcement are inherently risky, high-stress jobs even in the best of circumstances, public attention to the psychiatric burden borne by these first responders has been crystallized by a series of high-profile disasters, such as the large-scale mass shootings in San Bernardino and Las Vegas and the unprecedentedly large and intense wildfires that have become common in recent years. Attention has also been drawn to the mental health challenges facing first responders by estimates indicating that, nationwide, more firefighters and

peace officers have died by suicide than in the line of duty in recent years (Heyman, Dill, and Douglas, 2018).

Senate Bill 542

One policy lever with the potential to increase firefighters' and peace officers' use of mental health care through workers' compensation is to lower the standard of evidence through a legal presumption that PTSD is work-related for those in these occupations. In 2019, California established such a presumption when SB 542 (Stern) was signed into law. Labor Code Section 3212.15, which was added by SB 542, creates a rebuttable presumption that PTSD is a work-related injury and thus compensable under workers' compensation for injuries occurring between January 1, 2020, and January 1, 2025. The presumption applies to "active firefighting members" of fire departments; fire and rescue services coordinators who work for the Office of Emergency Services; and peace officers "who are primarily engaged in active law enforcement activities." In this report, we refer to the occupations specified in SB 542 collectively as "first responders," with due regard for the fact that they are not the only occupations considered first responders in common usage or in other emergency response contexts.

By reducing the standard of evidence, SB 542 is intended to encourage care-seeking and to reduce the stigma associated with filing a workers' compensation claim for a mental health condition. If SB 542 achieves the intended effects, we expect to see higher claim volumes, fewer claim denials, and, most importantly, more frequent and timely receipt of mental health care by first responders dealing with posttraumatic stress. While direct evidence showing how claim filing and access to care are affected by legal presumptions does not currently exist, the basic premise of SB 542 (that reducing barriers to claiming will increase access to benefits) is valid: Previous research indicates that workers' compensation disputes and claim denials are highly stigmatizing to workers and that such barriers to compensation and medical care serve as a deterrent to claim filing (Strunin and Boden, 2004).

California's experience with other occupational disease presumptions also suggests that, while presumptions have not eliminated claim denials, they substantially influence claim-filing rates and claim outcomes. A recent RAND study on occupational cancer in California's workers' compensation system found that, although cancer claims were denied at far higher rates than other workers' compensation claims, cancer claims filed by public safety workers who were covered by California's cancer presumption were less than half as likely to be denied as cancer claims filed by other workers not covered by the presumption. These other workers face the higher bar of evidence ("contributing cause") for occupational disease that prevails in the absence of the presumption (Dworsky and Rutter, 2020). Given that the evidentiary bar for psychiatric injury claims is higher than for any other injuries contemplated by the workers' compensation system, we might expect to see even more substantial impacts from the presumption established by SB 542.

Notwithstanding the worthy objectives of SB 542, local governments in California opposed the legislation out of concern about its potential budgetary impact (SB 542 Workers' Compensation, 2019). Assemblymember Tom Daly, in the letter requesting CHSWC to develop evidence on the impacts of SB 542, also pointed out that policymakers should seek to limit the complexity and number of special exceptions carved out of the workers' compensation system, a philosophy espoused by former Gov. Jerry Brown in his veto messages for other bills that would have modified the workers' compensation system for specific groups of workers. However, as acknowledged by Assemblymember Daly's letter, the legislature was unable to seriously weigh the costs and benefits of the PTSD presumption, due to (1) a lack of evidence regarding the prevalence of PTSD and mental health conditions among California first responders, (2) the frequency of denials of claims involving mental health conditions under the status quo, and (3) the potential impact of increased claim filing and reduced claim denials on medical and indemnity benefits.

Unlike other presumptions for public safety workers that were established in Labor Code Sections 3212 and 3213, the presumption for PTSD established in section 3212.15 will expire in less than five years without further legislative action. Although this study is being conducted too soon after implementation of the PTSD presumption to observe its full impacts on claiming rates, claim denials, and costs to state and local government, the specific questions raised by Assemblymember Daly can and should be addressed as soon as possible.

Overview of Study

This evaluation study aims to provide available evidence on the incidence of mental health conditions or illnesses among firefighters and peace officers and then discuss the implications this has for policy regarding the presumption established by SB 542 that established a rebuttable presumption that PTSD among first responders is work-related and thus eligible for full workers' compensation benefits. The remainder of this chapter outlines RAND's mixed-methods approach to this rigorous, independent evaluation study. In what follows, we provide detail on the qualitative and quantitative methodologies, data collection, data sources, and study populations used.

Approach and Study Design

We employed a mixed-methods approach, using quantitative and qualitative methods to evaluate the incidence of mental health conditions for first responders, to address specific research questions, and to recommend potential modifications to SB 542 and the workers' compensation process.

The qualitative efforts involved (1) convening a TAG to inform study priorities and assess community reactions to our findings and (2) conducting a targeted set of interviews with key stakeholders, such as first responders, applicants' attorneys (i.e., attorneys of first responders who have filed workers' compensation claims), department chiefs, claims administrators, and mental health providers.

The quantitative efforts involved (1) analyzing household surveys to produce population-based estimates of the prevalence of mental health disorders and of suicide attempts and ideation among first responders; (2) evaluating workers' compensation claims data to describe PTSD claim incidence rates, claim denial rates, and claim outcomes in California; and (3) projecting the costs to state and local government that may result from SB 542, both as enacted and under an expanded, retroactive presumption that was removed from the originally proposed bill during the legislative process.

Refer to Appendixes B and C for additional descriptions of the qualitative and quantitative methodologies and approaches used in this study.

Qualitative Research

Our aim was to systematically gather the experiences of those who have used the workers' compensation system for treatment of job-related mental health injuries and conditions across California. By doing so, we hoped to provide context and insight for the quantitative assessment of the prevalence and job-relatedness of mental health conditions among first responders. As our main qualitative task, we conducted in-depth semistructured interviews with key stakeholders: firefighters and peace officers who had sought mental health care for job-related trauma exposure, applicants' attorneys who represent firefighters and peace officers using the workers' compensation system, department chiefs, claims administrators, and mental health providers for first responders. We also convened a TAG and held a meeting at the beginning of the project to discuss our research design and research questions, and at the end of the project, to discuss our qualitative and quantitative findings and gain the stakeholder community's reaction and input.

Technical Advisory Group

Individuals recruited for the TAG were meant to balance stakeholder perspectives and included mental health professionals, managers and employers including police/fire chiefs, workers' compensation attorneys, claims professionals from insurers or third-party administrators, those who work with small or large departments across Northern and Southern California, and stakeholders with experience with first responder's use of the workers' compensation system. Our TAG included two insurers, one from a commercial insurer and the other from a self-insured plan; two mental health providers; one expert in PTSD; one applicant attorney; one defense attorney; four first responder professional association representatives, including two for firefighters and two for peace officers; and four employers.

We convened the first expert TAG meeting at the beginning of the project to discuss our research design, research questions, and overall approach. Using our findings from the above background research, interviews, and analysis of secondary data sources, we also convened our TAG to review findings, discuss current trends and implications for SB 542, and provide input and feedback on potential refinements.

Interviews

The interviews involved several tasks. First, we drafted recruiting scripts, developed information fact sheets to use during recruitment, developed the interview protocols, and submitted these for Human Subjects Protection Committee approvals with RAND's Institutional Review Board. Next, we established our stakeholder samples (applicants' attorneys, departments) and employed a nested department-based recruitment strategy, using quota-based, purposive sampling techniques, to engage interview respondents.

Stakeholder Samples

To identify fire and peace officer departments that had experience using the workers' compensation system for mental health claims across California, we obtained, in consultation with DIR, claims data with injury dates from 2010 to 2019 for claims submitted to employers that were fire departments or peace officer organizations. For each such employer, we calculated the volume of all claims and then the volume, proportion, and denial rate of mental health claims. From these data, we identified departments that had high proportions of mental health workers' compensation claims and either high or low mental health claim denial rates. Denied claims included those with full or partial denial for any benefit type. We then used ZIP codes to classify whether these departments were located in urban or nonurban regions of Northern or Southern California.

Using this sampling frame information, we created ordered recruitment lists across two main department-level variables: type of first responder department (fire versus peace officer) and California location (Northern versus Southern). We then identified departments within each of these lists that had high volumes of mental health claims; from those, we further identified departments with either low denial rates for mental health claims (5 to 15 percent) or high denial rates for mental health claims (40 to 60 percent). See Table 2.1 for the sampling frame for recruiting departments. This sampling strategy yielded eight recruitment lists. For example, one list was for fire (or peace officer) departments in Northern California that had a high proportion of mental health claims and high denial rates for those claims; another list was for fire (or peace officer) departments in Southern California with a high proportion of mental health claims and high denial rates for those claims; and yet another list was for fire (or peace officer) departments in Northern California with a high proportion of mental health claims and low denial rates for those claims. These recruitment lists included a total of 32 departments across police and fire and were spilt across Northern and Southern California. The aim was to recruit one participating department of each type, yielding eight departments. Urban and nonurban characteristics were not explicitly used in the sampling frame, but urbanicity was tracked and used during recruitment to yield a balance of urban and nonurban departments in the final sample.

Separately from the department-based recruiting, we obtained a sample of applicants' attorney names and contact information for first responders across California (i.e., in urban and nonurban areas of Northern and Southern California) from the California Applicants' Attorneys Association. We added applicants' attorney interviews to the study design after consulting with

Table 2.1. Sampling Frame for Recruiting Fire Departments and Peace Officer Organizations

	High Proportion of Mental Health Claims and High Denial Rates for Mental Health Claims	High Proportion of Mental Health Claims and Low Denial Rates for Mental Health Claims
Northern CA	1 Fire and 1 Police Department	1 Fire and 1 Police Department
Southern CA	1 Fire and 1 Police Department	1 Fire and 1 Police Department

NOTE: We recruited a mix of urban and nonurban departments across California (CA).

with the TAG because applicants' attorneys who represent first responders can offer perspectives on claim processes and case outcomes for a large number of first responder clients with mental health conditions. In addition, they can provide unique insights into issues related to claim denials and the role of the presumption and evidentiary standards in the claim process.

Recruitment

We used a nested department-based recruitment strategy (see Figure 2.1). We recruited a department into the study from one of the eight sampling lists by gaining the interest and approval of the department chief. The chief conducted an interview with our team and then provided the names and email addresses of two to three claims administrators supporting the department. They also gave us the names of three to four of the most used mental health providers to which they referred first responders, including both individual clinicians and organizations. We used these convenience samples to recruit the claims administrator and mental health provider for each of the eight departments. The participating mental health providers included Ph.Ds. in clinical psychology ($N = 4$), doctors of psychology (Psy.D.) ($N = 3$) and licensed marriage and family therapists (LMFTs) who were also board-certified experts in traumatic stress (BCETS) ($N = 3$).

Figure 2.1. Nested Department-Based Recruitment Strategy for Interviews

Mental health providers agreed to be interviewed and to recruit clients who were first responders in the department being studied and who were receiving treatment for a job-related incident. We asked the providers to identify firefighter/peace officer clients with a mental health workers' compensation claim or job-related mental health condition whom they had treated

within the last year (or were currently treating and stable). These providers were then instructed to contact these clients using a script we provided, which prompted them to introduce the study to the first responders, gain their interest, and get permission to connect them with the RAND study team. (This script appears in Appendix B.) When first responder clients expressed interest, providers either obtained their contact information and passed it on to the RAND qualitative team or supplied them with RAND's 800-number, which clients could call to schedule an interview.

For each of the eight departments, we aimed to recruit and interview four people: the chief/commander of the department, a claims administrator who supported the department, a mental health provider most used by first responders in the department, and at least one first responder with a mental health workers' compensation claim who worked in the department. During our recruitment of the eight departments, we tracked the department's urbanicity and aimed to balance the urban and nonurban departments across Northern and Southern California.

Interviewing

Five standardized interview protocols were developed, one each for department chiefs, claims administrators, mental health providers, first responders with mental health workers' compensation claims, and applicants' attorneys. The interview content was similar across all five guides and consisted of a set of core questions in addition to a set of tailored questions specific to each stakeholder group. An outline of the interview topics by stakeholder is provided in Appendix B.

In general, the interviews were designed to help us understand the experiences and perspectives surrounding first responders' mental health conditions, the job-relatedness of their mental health workers' compensation claims, the processes they went through to file workers' compensation mental health claims, and their means of accessing mental health treatment. Interview topics for specific stakeholder groups included the following:

- Interviews with chiefs focused on the types of resources and services available to workers dealing with behavioral health issues, their ability to recognize the signs and symptoms of trauma, their perspectives on whether current processes and resources were adequate and working, their awareness of whether a claim for mental health support was denied, the degree of difficulty they had in proving that mental health conditions were job-related, and their experiences (if any) with workers who had denied claims but sought treatment later (addressing research questions 3, 5, and 10).
- Interviews with claims administrators focused on the main reasons for denying a first responder's workers' compensation claim for mental health care (addressing research questions 3, 5, 7, 8, and 9).
- Interviews with the mental health providers focused on their experiences with denied mental health claims, the reasons denied claims occur, the feasibility of proving or disproving the job-relatedness of mental health claims, their experience (if any) helping a patient overturn a denied mental health claim, their experience with denied claims that followed prior mental health treatment, situations in which they provided treatment to clients with previously denied mental health claims, and their opinions on how to reduce denied claims for the mental health of firefighters and peace officers (addressing research questions 6, 7, and 10).

- Interviews with firefighters and peace officers focused on their experiences with needing help for job-related injuries associated with mental health symptoms; their ability to access and pay for mental health support via workers' compensation; the types of mental health help and support they received; and their opinions on the stigma, incidence, and access issues related to obtaining coverage for mental health conditions and illnesses (addressing research questions 1, 2, 6, 7, and 10).
- Interviews with applicants' attorneys focused on claim processes and case outcomes based on their experiences representing first responder clients with mental health conditions and other claims. Applicants' attorneys are able to provide unique insights into issues related to claim denials and the role of the presumption and evidentiary standards in the claim process (addressing research questions 3, 5, 6, 7, 8, 9, and 10).

We conducted 51 total interviews across California: Nine of these were with applicants' attorneys; 13 were with first responders with job-related mental health conditions (11 of whom filed workers' compensation claims) and were nested within our eight-case example departments; eight were with department chiefs/commanders; eight were with the mental health providers that the departments referred workers to; eight were with claims administrators who handle the department workers' compensation claims; and five were with chiefs (three) and mental health providers (two) who worked for departments that had arranged means other than workers' compensation to support mental health treatment for first responders.

All interviews were conducted by phone over a 17-week period, from November 2020 through February 2021. We conducted an informed-consent process with each participant before starting the interview. All interviews were audio-recorded and transcribed verbatim, and field notes documented context. Interviews lasted 50 to 60 minutes with the exception of the first responder interviews, which lasted 70 to 90 minutes.

We recruited a total of 11 departments (with 11 soft refusals and two hard refusals; and eight departments were never contacted), yielding a 46-percent response rate (11/24). A hard refusal is a declined response (i.e., an answer of no), while a soft refusal is no response after multiple inquiries. For three of these 11 departments, we completed a chief interview (as a possible backup department as we continued to work to recruit and complete interviews nested within participating departments). For these three departments, we did not complete either a mental health provider interview or a claims administrator interview. We stopped nested department-based recruitment when we completed the full set of interviews (chief, claims administrator, mental health provider, first responder) across the eight departments. We stopped recruitment of an applicants' attorney after five contact attempts.

Concurrently, we also recruited and interviewed all of the 13 first responders who were referred to us as being interested in the study; this included six firefighters and seven police officers. We had two firefighters from one fire department and two police officers from two departments; otherwise, we had one first responder per department for 10 of the 11 departments.

For applicant attorney interviews, we completed nine (out of ten) (i.e., having one soft refusal), yielding a 90-percent response rate.

In sum, the completed interviews included 24 department-based interviews (eight chiefs, eight claims administrators who handle claims for the participating department, and eight mental health providers that are referred to from the participating department); 13 first responder interviews (six firefighters and seven police officers); nine applicants' attorneys; and five backup department interviews (three chiefs and two mental health providers). Appendix B includes details on the characteristics of the eight study departments (i.e., departments for which we completed a chief, claims administrator, mental health provider, and injured worker interview) as well as the applicants' attorney and first responder samples.

Analysis and Coding

Transcripts were reviewed, aligned with the protocol questions, and finalized. We entered transcripts into Dedoose (SocioCultural Research Consultants, 2019), a web application for analyzing qualitative data.

We conducted both inductive and deductive content analysis to develop a coding scheme for performing a qualitative description of the themes discussed by the workers' compensation stakeholders. We used directed (deductive) content analysis, looking for *a priori* constructs related to the specific research questions and interview questions. We also used inductive content coding and analysis, where latent categories or themes emerge from the data, which is appropriate when little is known about the phenomenon of interest (Cavanagh, 1997; Downe-Wamboldt, 1992).

With this combined approach, we established a coding scheme to yield a qualitative description of the themes discussed by the five stakeholder groups and to answer the posed research questions. We first developed codes based on the items in the interview protocols and on key research questions (Bernard and Ryan, 2010), with many codes common across stakeholder groups/protocols (by design). Then we further developed the code structure using systematic, inductive procedures to generate insights from responses (Bradley, Curry, and Devers, 2007; Thomas, 2003). Two qualitative team members, led by Dr. Quigley, independently test-coded the same two transcripts for all major themes in the codebook for each stakeholder group. After this initial coding exercise, we compared the differences between the two coders' application of codes to the interview text and obtained the following pooled kappa coefficients: 0.86, indicating "very good" coder agreement for applicants' attorney interviews; 0.75, indicating "good" coder agreement for first responder interviews; 0.82, indicating "very good" coder agreement for department chief interviews; 0.85, indicating "very good" coder agreement for claims administrator interviews; and 0.88, indicating "very good" coder agreement for mental health provider interviews. Discrepancies were resolved by the coders reaching consensus through discussion, which also resulted in additions or modifications to a number of codes, as expected. We used regular team meetings to reach consensus on topics, identify discrepancies, refine concepts, make codebook changes, define codes, and dialogue about concepts and themes.

The two coders conducted such coding to identify topics, coding transcripts independently and refining the codebook (Bernard and Ryan, 2010).

Team members worked together in identifying themes and subthemes and in reviewing the sets of interviews by type of respondent and type of department/organization to understand any differences or similarities. This thematic and case-study analysis yielded summaries of the main themes involved in qualitative findings for each of the relevant research questions, by relevant stakeholder group and department type. These thematic and case-study comparative analyses highlight the differences and similarities found by department and stakeholder characteristics (such as a department's type [fire or police] urbanicity or claim denial rate).

Technical Advisory Group

During initial recruitment of fire departments and peace officer organizations, we concurrently assembled a TAG. Key stakeholder groups for the TAG were identified to make sure a comprehensive set of perspectives was present to advise the project team on analyses and results. Individuals recruited for the TAG were meant to round out the perspectives being gained from the stakeholder interviews, including those who work in small and large departments, those from Northern and Southern California, and those with a range of first responder workers' compensation experiences. As such, we included two insurers (one commercial insurer and one from a self-insured plan); two mental health providers with expertise in PTSD and treatment of first responders in California; one national expert in PTSD; one applicants' attorney; one defense attorney; four first responders, including two firefighters (one from Northern California and one from Southern California) and two peace officers (one from Northern California and one from Southern California); and four first responder employers.

We held the first TAG meeting (virtually) on October 13, 2020, before interviews started, to allow for input and feedback on the overall design and approach. The meeting was structured with an agenda and included presentations and time for questions and discussion. For the initial TAG meeting, the RAND team laid out the research objectives, the specific research questions, the known and unknown factors, the analysis strategies, the issues, the challenges, the study approach, and the policy framing to gain important context from stakeholders. The TAG provided input and feedback and validated information on the processing and filing of claims for mental health conditions, uncovered a few inconsistencies and areas of confusion in SB 542, identified the strengths and weaknesses of the current workers' compensation process specific to mental health claims, provided insight into issues with processing and adjudicating first responder claims for mental health conditions and illnesses, and gave input into the proposed sampling and recruitment approaches.

We convened a second TAG meeting (virtually) on May 11, 2021. The expert TAG members reviewed the qualitative and quantitative research findings, discussed the implications of the study's analyses on SB 542, and provided feedback on the findings prior to finalizing the report.

The TAG input and feedback at both meetings was documented by a notetaker, used to aid in understanding the issues across the quantitative and qualitative team members, and incorporated into the final report.

Limitations of Qualitative Approach and Findings

We interviewed a small, diverse set of first responder departments across California, which were sampled using mental health claims information by employer from 2010 to 2019 claims data. We recruited (using quotas) to ensure a balance between (1) departments with high volumes of mental health claims and either high or low denial rates for mental health claims (2) fire and peace officer departments, (3) departments in urban and nonurban settings, and (4) departments from Northern and Southern California. For each department, we interviewed the department chief, and then using names and contact information provided by the department chief, we interviewed a claims administrator and mental health provider that support the department. The sample of departments most likely is affected by participation bias. By simply agreeing to participate in this study, the chiefs were open to acknowledging mental health and mental health needs within their departments; not all chiefs have this point of view. Having a chief who is open to acknowledging mental health may make the department culture as a whole (or at least a little) more open and less stigmatized about mental health than in departments that refused to participate (we had three explicit department/chief refusals out of 24). As such, first responders from our participating departments likely had a different overall experience (again, at least a little) than those in nonparticipating departments. Even though our sample of respondents may not generalize to all settings, it is, however, instructive and sheds light on the range of experiences and issues surrounding mental health for first responders and the workers' compensation system. Our sample is limited to those willing to discuss mental health treatment for first responders, including injured workers willing to discuss their own experiences. Thus, those we interviewed are more likely to be aware of mental health treatment and most likely do not include department chiefs that do not see mental health as an issue that needs addressing. We also (due to time and resources) typically talked to three stakeholders for each department (the chief, claims administrator, and mental health provider); this may not have revealed all perspectives on the issues within a department, but our sample was purposively chosen using quotas, pulling individuals from strata by location and by high and low mental health-claim denial rates, so that a variety of perspectives were included.

We also acknowledge potential limitations to the generalizability of our sample of first responders with mental health conditions. By design (as we used mental health providers from the sampled departments to recruit first responders), all of the firefighters and peace officers that we spoke to had overcome some stigma of reaching out for help (as they did reach out) and had received mental health treatment. As such, we cannot provide insight or describe issues for those first responders who did not seek help or reach out. Moreover, the interviewed first responders all revealed that they had PTSD diagnoses. This means that their experiences, as recounted in

this study, represent only those first responders with PTSD diagnoses, which may overestimate the presence of the disorder in these situations. It also means we cannot speak to the experiences of first responders who were exposed to trauma at work but did not gain a PTSD diagnosis. Finally, it is likely that mental health providers referred us to clients who they knew had complex experiences, with possible more severe circumstances surrounding their mental health issues or who had difficulty negotiating the workers' compensation system to access mental health treatment, which could have affected results. Therefore, a larger, broader, multisite evaluation of the mental health issues of first responders may be needed to identify additional insights, challenges, and lessons learned.

Quantitative Research

We also conducted quantitative analyses of several datasets to address many of the research questions. We analyzed data from two household surveys to characterize the prevalence of mental health conditions and suicidality among first responders and workers in similar occupations. We also used administrative data from the California workers' compensation system to address a wide range of questions about claim volumes, denial and reversal rates, and costs associated with workers' compensation claims for PTSD and other mental health conditions. We introduce these datasets and key outcome variables here, with additional details presented in Appendix C.

Analysis of Health Interview Surveys

To examine the prevalence of mental health conditions and suicidality across occupations, we relied primarily on the California Health Interview Survey (CHIS). The CHIS is an annual household survey of the health status and health behaviors of California residents. The survey items cover physical and mental health conditions, beliefs, and treatments; demographic data and occupation codes are gathered as well. We pooled CHIS data from the 2013–2019 period (occupation questions were not included in the CHIS before 2013) yielding a sample of 73,969 adult workers, including 136 firefighters and 343 peace officers.

The CHIS is administered jointly by the University of California Los Angeles' Center for Health Policy Research, the California Department of Public Health, and the Department of Health Care Services. The survey is conducted confidentially to encourage candid responses to sensitive questions regarding physical and mental health. All estimates from the CHIS are weighted to be representative of California's non-institutionalized population. See Appendix C for further details.

Because the sample size of firefighters and peace officers in the CHIS is somewhat limited, we also examined the prevalence of mental distress in nationwide data covering the 2004–2018 period, from the National Health Interview Survey (NHIS). In the NHIS, we had a sample of 131,256 first responders and comparison workers, including 484 firefighters and 2,141 peace officers. While the NHIS offers a larger sample size, occupation codes in the NHIS are less

detailed than in the CHIS, and state codes are not available in the public-use NHIS. The NHIS also does not contain questions about suicidality. We downloaded the NHIS from IPUMS (Blewett et al., 2019). NHIS estimates of mental distress prevalence by occupation are discussed briefly in Chapter 3 and reported in Appendix C.

Serious and Moderate Mental Distress

The prevalence estimates reported in Chapter 3 focus primarily on two mental health outcome measures: serious mental distress (as measured by the K6 survey instrument) and suicidality (measured through self-reports of suicidal ideation). The K6 score is a widely used set of six survey items that asks respondents about the frequency with which they have experienced different mental health symptoms over the past 30 days (e.g., "During the past 30 days, about how often did you feel hopeless—all of the time, most of the time, some of the time, a little of the time, or none of the time?") Individual responses are scored on a scale from zero to four, where symptoms experienced all the time are scored as four and symptoms never experienced are scored as zero. The scores for individual items are added to obtain the K6 score, which ranges from zero to 24. Scores above 12 are classified as "serious mental distress," which indicates a level of symptom severity that optimally distinguishes those who are likely to have serious mental illness from those who are unlikely. The K6's serious mental-distress threshold of 12-plus was developed in a general population of adults in the Boston area, as described in Kessler et al. (2003). Additional details on the K6 are available on the internet (Harvard Medical School, 2021).

We also examined rates of moderate mental distress, defined as a K6 score of between five and 12. Moderate mental distress is defined as a condition in which individuals experience less symptom severity than those with serious mental distress but would still benefit from mental health care. This definition was developed using 2007 data from the CHIS on the general adult population in California (Kubiak, Beeble, and Bybee, 2009; Prochaska et al., 2012).

We compare the prevalence of serious mental distress across occupations in the 2013–2019 CHIS. Sampling weights are applied so that these estimates are valid for the California workforce between 2013 and 2019.

Suicidal Ideation and Lifetime Suicide Attempts

Assemblymember Daly and CHSWC also requested evidence on the risk of "suicide, attempted suicide, or other serious mental health conditions" across different occupations. It was not feasible within the scope of this study to compare suicide rates across occupations, which would require analysis of death certificate data. However, the CHIS includes survey questions that capture thoughts of suicide (*suicidal ideation*) and past suicide attempts. The suicidal ideation question, which has been asked of all adult CHIS respondents since 2013, is worded as follows: "Have you ever seriously thought about committing suicide?" This question was originally developed by Kessler et al. (2004) for use in the National Comorbidity Survey. More

recently, the question appears in the World Health Organization's World Mental Health Composite International Diagnostic Interview.

We use these data to estimate the proportion of workers with any lifetime history of suicidal ideation and compare the data of first responders to that of workers in similar occupations. We also produced similar estimates of suicide attempts in the CHIS, but very few respondents in first responder occupations reported any history of attempted suicide, and we considered these estimates too imprecise to be very informative: we present these data in Appendix C but do not discuss them at length in the report.

Analysis of Workers' Compensation Claims Data

While estimates from the CHIS and NHIS show the prevalence of mental distress and suicidal ideation among firefighters and peace officers, there is no available survey data that capture a large enough sample of first responder experiences with the workers' compensation system to aid in analyzing the specific occupations and conditions of interest in this study.

To achieve the aims of this study focused on claim incidence, claim denials, and other claim outcomes, we analyzed administrative records from the Workers' Compensation Information System (WCIS). The key databases necessary for this study include First Reports of Injury (FROI), Subsequent Reports of Injury (SROI), and Medical Bill Payments. Here, we briefly describe these datasets and define the key variables used in our analysis, including our approach to ascertaining whether PTSD or other mental health conditions are involved in a claim.

The FROI is a report submitted by a claims administrator to the WCIS indicating that a new workers' compensation claim has been filed. It includes detailed information about the injured worker, the employer, and the injury. FROI information that is particularly relevant for this study includes key dates in the claim history (including the date of injury, the date of report to the employer, and the date of report to the claims administrator), worker demographics (i.e., age and sex), geography (e.g., worker's ZIP code of residence), occupation (a free text occupation description field), job and employer characteristics (i.e., weekly wages and industry), and information about the type of injury (i.e., nature, cause, and body part of injury) as classified at the time the claim was initially filed. If claims are denied before any payment of indemnity benefits, this denial is also reported on the FROI.

The SROI database contains any subsequent reports of events filed in the processing of the claim, including the payment or settlement of each type of workers' compensation benefit, the start and end dates of payments, and the cumulative amount paid to date. The SROI also reflects termination of benefit payments, claim closure, and full or partial claim denials occurring both after the initial investigation phase and after benefits have been paid. The SROI provided our main measure of workers' receipt of indemnity benefits and settlements and of employers' costs associated with these benefits. We also calculate claim denial rates inclusive of denials reported on the SROI.

Finally, we use claims from the Medical Bill Payment files of the WCIS to measure medical spending, to examine patterns of medical bill denials, and, most important, to identify which workers have PTSD that is treated (or for which treatment is sought) through the workers' compensation system. We measure medical spending by summing paid amounts on final medical bills (after de-duplication, exclusion of certain adjustments, and other data-cleaning procedures) over specified windows of time relative to the first service date. We focus primarily on payments for care received within two years of the first service date, including hospital and other institutional care, professional services, and prescription drugs. Estimates of medical costs on service dates more than two years after the first service date were also examined for earlier injury years.

We note that denied medical bills must be reported to the WCIS—this is important for the measurement of medical bill denials and for ascertaining whether claims involve PTSD (discussed below) or other health conditions. To characterize bill denials, we take two approaches: we compare the total number of bills submitted with the number of bills denied (yielding an unweighted percentage of denied bills), and we compare the volume of charges on bills submitted with charges on bills that are denied (yielding a charge-weighted percentage of denied bills). We examine denial patterns for all care and specifically for claims with mental health conditions (including PTSD) listed as the principal diagnosis.

The years of data used in our analysis are constrained by the availability of WCIS data. In particular, collection of medical bills began during 2007, while FROI and SROI data were collected beginning in 2001. Data were extracted from WCIS in December 2020, allowing at least 11 months of follow-up for all injury dates in 2019 or earlier. Because we need the medical billing data to ascertain which workers had PTSD diagnoses, we focus on injury dates in 2008 or later. We thus focus primarily on data from the 2008–2019 injury years in our WCIS analyses. We follow earlier studies in implementing a constant-maturity case definition that is comparable across workers injured at different dates, by identifying diagnoses appearing on bills for services rendered within a fixed window after the earliest medical service date (e.g., the first three, six, 12, or 24 months of the claim).

We also end our sample period with 2019 injury dates for several reasons. Although the WCIS data used in this study contain a number of 2020 injuries, we were very concerned that ascertaining cases using diagnoses from medical bills would systematically underestimate PTSD claim frequency: the follow-up period after the injury date for claims in 2020 is sharply limited (to ten months, at most, for claims filed in January). The COVID-19 pandemic, furthermore, dramatically altered non-emergency health care use, reduced access to in-person care, and increased the use of telehealth. We do not know how these impacts would have affected the use of PTSD care in the workers' compensation system. In short, even if we found statistically significant changes in PTSD claims volumes in 2020, it would be essentially impossible to interpret whether any such changes reflected impacts of SB 542, problems with case ascertainment over a short period, or changes in care-seeking behavior driven by the pandemic.

It is also very likely that the events of 2020 (including the pandemic, the 2020 fire season, and widespread racial-justice protests) sharply increased first responders' exposure to workplace trauma, making it even more challenging to isolate the impact of SB 542, even if there were not prohibitive data challenges.

In summary, the quantitative analyses in this study reflect the pre-SB 542 status quo and not what has happened since SB 542 took effect on January 1, 2020. Some qualitative research findings on stakeholders' experiences since SB 542 took effect are discussed in Chapter 8, however; and in the conclusion, we provide useful recommendations for studying PTSD claims and injuries occurring post-SB 542.

Case Ascertainment

We use diagnosis codes from medical bills reported to the WCIS to ascertain which claims involve PTSD, other mental health conditions, or other health conditions covered by legal presumptions. We classify workers as having each condition of interest if the relevant set of diagnosis codes appears on one or more medical bills submitted to the WCIS, regardless of their position (i.e., including secondary diagnoses). As noted above, denied claims are included in the WCIS, and we include them in case ascertainment as well.

PTSD is identified on the basis of ICD-9-CM and ICD-10-CM codes, as listed in Table 2.2. For claims with ICD-9-CM codes, which were predominant before October 1, 2015, PTSD is defined by code 309.81. For claims with ICD-10-CM codes, which were mandatory for claims submitted on October 1, 2015, and after, PTSD is defined by codes F43.10, F43.11, and F43.12.

We also defined two broader measures of mental health conditions using the Clinical Classifications Software (CCS) and Clinical Classifications Software Refined (CCSR) algorithms, which we discuss below. Our intermediate definition captures workers with any anxiety disorders (under ICD-9) or trauma- and stressor-related disorders (under ICD-10), which are the diagnostic categories (CCS and CCSR codes) that contain PTSD. We also examined a broad definition of mental health conditions containing all nonpsychotic mental disorders, including categories such as depressive disorders, other mood disorders, and personality disorders: the CCS and CCSR codes used in this definition are listed in Table 2.2. This definition was chosen to provide some estimates of the frequency of claims and other outcomes for a wider range of mental health conditions, but we focus on PTSD and anxiety and trauma-related disorders in most of our empirical analysis.

Assemblymember Daly and CHSWC were also interested in comparing PTSD claims with claims for ten other conditions covered by presumptions that existed when SB 542 was enacted. Table 2.3 provides details on these conditions and lists the diagnosis and CCS and CCSR codes used to ascertain these conditions in the WCIS medical billing data.

While several of the specific presumption-covered conditions (MRSA and Lyme disease) can be identified using one or a handful of ICD codes, others (such as cancer and lower back impairments) may correspond to over 1,000 diagnosis codes. To identify these broader conditions

Table 2.2. Definitions and Code Lists for PTSD and Other Mental Health Conditions Examined in Analysis of Workers' Compensation Claims

Case Definition	ICD-9 or CCS Codes (September 2015 and earlier claims)	ICD-10 or CCSR Codes (October 2015 and later claims)
PTSD (Narrow Case Definition)	PTSD (ICD-9-CM 309.81)	PTSD (ICD-10-CM F43.10, F43.11, F43.12)
Anxiety and Trauma-Related Disorders (Intermediate Case Definition)	Anxiety disorders (CCS 651)	Trauma- and stressor-related disorders (CCSR MBD007)
Nonpsychotic Mental Disorders (Broad Case Definition)	Adjustment disorders (CCS 650) Anxiety disorders (CCS 651) Mood disorders (CCS 657) Personality disorders (CCS 658) Suicide and intentional self-inflicted injury (CCS 662)	Depressive disorders (CCSR MBD002) Bipolar and related disorders (CCSR MBD003) Other specified and unspecified mood disorders (CCSR MBD004) Anxiety and fear-related disorders (CCSR MBD005) Trauma- and stressor-related disorders (CCSR MBD007) Personality disorders (CCSR MBD009) Suicidal ideation/attempt/intentional self-harm (CCSR MBD012) Suicide attempt/intentional self-harm; subsequent encounter (CCSR MBD027)

SOURCES: For ICD-9 CCS codes, see Agency for Healthcare Research and Quality, 2017. For ICD-10-CM, see Agency for Healthcare Research and Quality, 2020.

NOTE: Code lists were initially proposed by Dr. Dworsky and finalized after consultation with Dr. Meredith and the study team.

in the medical claims, we used the Clinical Classifications Software (CCS) and Clinical Classifications Software Refined (CCSR) algorithms developed by the Agency for Healthcare Research and Quality's Healthcare Cost and Utilization Project (2017, 2020). The CCS algorithm was developed to group together ICD-9 into clinically meaningful categories, providing an open-source method for deriving the diagnosis code lists necessary to identify the various presumption-covered conditions that we examine. The CCSR algorithm was developed for ICD-10 codes after AHRQ determined that the structure of CCS was not optimal for the much richer amount of detail contained in ICD-10 codes. These code lists were initially proposed by the RAND team (Dr. Dworsky in consultation with Dr. Meredith) and were subsequently reviewed by the DIR medical director and other DIR experts. Note that the presumption covering "exposure to a biochemical substance" does not correspond neatly to any health condition, so we used the Workers Compensation Insurance Organizations' cause-of-injury code for terrorism (96) to identify claims under this presumption. No such claims were found in our sample.

Table 2.3. Approach to Coding PTSD and Other Presumption-Covered Health Conditions

Health Condition (Labor Code sections)	Covers Peace Officers?	Covers Firefighters?	ICD-9 (September 2015 and earlier claims)	ICD-10 (October 2015 and later claims)
Cancer (3212.1)	Y	Y	Cancer, excluding benign and unspecified neoplasms and cancer treatment codes (CCS 11-43)	Cancer, excluding benign and unspecified neoplasms and cancer treatment codes (CCSR NEO001-NEO071)
Exposure to a biochemical substance (3212.85)	Y	Y	NA (not a diagnosis or health condition); used WCIS Cause of Injury Code = 96. Terrorism	
Heart trouble (3212, 3212.2, 3212.3, 3212.4, 3212.5, 3212.7, 3212.10, 3213)	Y	Y	Heart disease (CCS 96, 97, 100, 101, 104, 106, 107, 108)	Heart disease (CCSR CIR001, CIR002, CIR003, CIR004, CIR005, CIR006, CIR009, CIR010, CIR011, CIR015, CIR016, CIR017, CIR018, CIR019, CIR029, CIR030)
Hernia (3212, 3212.4, 3212.7)	Y	Y	Abdominal hernia (CCS 143)	Abdominal hernia (CCSR DIG010)
Lower back impairments (3213.2)	Y		Spondylosis, intervertebral disc disorders, other back problems (CCS 205)	Low back pain (CCSR MUS038)
Lyme disease (3212.12)	Y		Lyme disease (ICD-9-CM 088.81)	Lyme disease (ICD-10-CM A69.2, A69.20-A69.23, A69.29)
Meningitis (3212.9, 3212.10)	Y	Y	Meningitis (CCS 76)	Meningitis (CCSR NVS001)
MRSA/blood-borne infections (3212.8)	Y	Y	MRSA infection (secondary ICD-9-CM V09.0)	MRSA infection (ICD-10-CM B95.62)
Pneumonia (3212.3, 3212.4, 3212.5, 3212.7, 3212.10, 3213)	Y	Y	Pneumonia (CCS 122)	Pneumonia (CCSR RSP002)
PTSD (3212.15)	Y	Y	PTSD (ICD-9-CM 309.81)	PTSD (ICD-10-CM F43.10, F43.11, F43.12)
Tuberculosis (3212.6, 3212.10)	Y	Y	Tuberculosis (CCS 1)	Tuberculosis (CCSR INF001)

SOURCES: For ICD-9 CCS codes, see Agency for Healthcare Research and Quality, 2017. For ICD-10-CM, see Agency for Healthcare Research and Quality, 2020. For Lyme disease code list, see Armed Forces Health Surveillance Center, 2014.

NOTE: Labor Code Section 3212.11 creates a presumption for skin cancer that is applicable to lifeguards. Because this presumption does not apply broadly to peace officers or firefighters, we omit this presumption from our study.

The use of medical claims to ascertain whether a worker suffers from specific health conditions is necessary because injuries reported on the FROI use codes that are insufficiently detailed to identify PTSD and many other conditions of interest. It is also necessary because work-related health conditions may not be known or accurately diagnosed at the time the initial claim is filed. This is especially true of PTSD and mental health conditions, which may emerge and receive clinical attention only after a worker files a claim for a physical injury or other

occupational illness. Assemblymember Daly and CHSWC accordingly instructed RAND to describe the distribution of initial injury types (i.e., FROI nature of injury) on claims with and without PTSD, and to compare this distribution across occupations. We report these results in Chapter 4.

Key Outcome Variables for Claims Data Analysis

Assemblymember Daly and CHSWC posed a number of questions in addition to those related to comparing the frequency of claims for PTSD and other conditions across occupations. Their questions also related to claim denial rates, reversals of initial denials, receipt of specific indemnity benefits (i.e., temporary disability, permanent disability, death benefits, and settlements), and costs associated with claims. We briefly describe these key outcome measures here.

Claim denials are identified using two binary variables, which indicate that a claim has been fully denied at either the initial investigation stage or later in the life of the claim. Division of Workers' Compensation (DWC) programmers, who had used transaction-level data on "maintenance type codes" to flag claims that were denied at these stages, provided these binary variables to RAND. The vast majority of full denials occur at the initial investigation stage, so we use denial on the FROI as our primary measure of claim denial.

Assemblymember Daly and CHSWC sought information specifically about the claim denial rates observed among different types of claims administrators, distinguishing between fully insured employers; self-insured employers using a third-party administrator (TPA); and self-insured, self-administered employers. Self-insured claims can be identified by a variable reported on the FROI, and we used the employer and claims administrator tax ID numbers (also reported on the FROI) to identify claims from self-administered employers. It is possible that this method may undercount self-administered claims from employers that use multiple tax ID numbers, but this would be a problem only to the extent that such employers choose to use a different tax ID number in these two fields. Because government employers are predominantly self-insured, we found very few fully insured claims by firefighters and peace officers (2.9 percent), and we do not report estimates for fully insured claims.

Because it is somewhat complex to identify claim reversals in the WCIS, our analysis of reversals focuses instead on the indemnity-benefit payment status of claims that are initially denied: we report the fraction of claims receiving each type of indemnity benefit by the initial denial status, the health conditions that appear on the claim, the type of claims administrator, and the occupation. Finally, costs associated with indemnity benefits and settlements are calculated from the paid-to-date amounts reported in the SROI.

Occupational Comparison Groups

Many of the research questions addressed in our quantitative analyses require comparisons among firefighters, peace officers, and other workers in similar occupations. Specifically,

Assemblymember Daly requested that CHSWC compare firefighters and peace officers with the overall workforce and with "nonpublic employments which pose similar exposure to traumatic stress, such as emergency room personnel, security guards, or private ambulance service employees." We accordingly defined several comparison groups, which are summarized in Table 2.4.

Table 2.4. Definitions of Comparison Occupation Groups

Occupation	SOC Occupation Titles	SOC Codes	Census Occupation Codes
First Responders	Firefighters	33-2011	3740
	First-Line Supervisors of Firefighting and Prevention Workers	33-1021	3720
	First-Line Supervisors of Police and Detectives	33-1012	3710
	Police and Sheriff's Patrol Officers,	33-3051	3850
	Detectives, and Criminal Investigators	33-3021	3820
Firefighters	Firefighters	33-2011	3740
	First-Line Supervisors of Firefighting and Prevention Workers	33-1021	3720
Peace Officers	First-Line Supervisors of Police and Detectives	33-1012	3710
	Police and Sheriff's Patrol Officers	33-3051	3850
	Detectives and Criminal Investigators	33-3021	3820
First Responder Comparison	Fire Inspectors	33-2020	3750
	Emergency Medical Technicians and Paramedics	29-2040	3400
	Control and Valve Installers and Repairers	49-9010	7300
	Telecommunications Line Installers and Repairers	49-9052	7420
	Miscellaneous Plant and System Operators	51-8090	8630
	Animal Control Workers	33-9011	3900
	Fish and Game Wardens	33-3031	3820
	Compliance Officers	13-1041	0565
	. . .		
	See Appendix D for a full list of comparison occupations		
Firefighter Comparison	Fire Inspectors	33-2020	3750
	Emergency Medical Technicians and Paramedics	29-2040	3400
	Control and Valve Installers and Repairers	49-9010	7300
	Telecommunications Line Installers and Repairers	49-9052	7420
	Miscellaneous Plant and System Operators	51-8090	8630
	. . .		
	See Appendix D for a full list of comparison occupations		
Ambulance Drivers and EMTs	Emergency Medical Technicians and Paramedics	29-2040	3400
	Emergency Medical Technicians	29-2042	9110
	Paramedics	29-2043	
	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	53-3011	
Peace Officer Comparison	Fire Inspectors	33-2020	3750
	Animal Control Workers	33-9011	3900
	Emergency Medical Technicians and Paramedics	29-2040	3400
	Fish and Game Wardens	33-3031	3820
	Compliance Officers	13-1041	0565
	. . .		
	See Appendix D for a full list of comparison occupations		

Occupation	SOC Occupation Titles	SOC Codes	Census Occupation Codes
Security Guards	Security Guards and Gambling Surveillance Officers	33-9030	3930
	Gambling Surveillance Officers and Gambling Investigators	33-9031	
	Security Guards	33-9032	
Correctional Officers	Bailiffs, Correctional Officers, and Jailers	33-3010	3700
	Bailiffs, Correctional Officers, and Jailers	33-1011	3800
		33-3012	

NOTES: SOC = Standard Occupational Classification. In some cases, there is not a one-to-one match between the SOC and Census occupation codes. As a result, some occupations listed above have more SOC codes than Census occupation codes listed, as is the case for Ambulance/EMTs, Security Guards, and Prison Guards. For a complete list of all occupation codes and titles used, please see Table D.1 in Appendix D.

First, we compared firefighters and peace officers with workers in several specific occupations with a high potential for exposure to traumatic stress. Firefighters were compared with non-firefighter ambulance drivers and Emergency Medical Technicians (EMTs). (Note that the Standard Occupational Classifications [SOCs] used to define the group we label "Ambulance Drivers and EMTs" contains ambulance drivers who are not trained as EMTs in addition to EMTs and paramedics.) The SOC code for firefighters is defined to include firefighters who are certified as EMTs or paramedics and whose job duties include medical calls, so firefighters are not included in the Ambulance Drivers and EMTs comparison group.

Peace officers were compared with private-sector security guards and correctional officers. Although correctional officers are peace officers, we assume in this report that they are not likely to satisfy the "primarily engaged in active law enforcement activities" condition required for the presumptions in SB 542 to apply. We accordingly treat them as a comparison group for police officers and sheriffs' deputies (who we believe are more likely to meet this requirement). We also note that correctional officers may have been employed in either the public or private sectors during the period covered by our data.

Second, we reported statistics for the entire workforce (consisting of all occupations) to provide context for our findings on peace officers and firefighters.

Third, we used data on job demands and working conditions to identify comparison groups for firefighters and peace officers that were composed of multiple occupations. We used data from the Occupational Information Network (O*Net) survey administered by the US DOL to rank occupations based on their similarity to firefighters and peace officers in regard to job demands and working conditions. The 50 occupations that most closely resembled firefighters and peace officers were included in the comparison groups. We excluded peace officer and firefighter occupations that were ranked in the 50 closest occupations from the comparison groups (i.e., neither peace officers nor firefighters were included in any of the comparison groups). We then assigned workers in these occupations to serve as comparison groups for firefighters or for peace officers. We also compared estimates for all first responders (firefighters and peace officers) pooled together, with a comparison group consisting of both the firefighter and peace officer comparison groups.

Table D.1 presents the full list of occupations chosen for comparison with firefighters and peace officers. We use SOC codes to identify workers in the occupations of interest. The restricted-use CHIS data in this study contain SOC codes, while the public-use NHIS data contain less granular Census Occupation Codes. In the NHIS analysis, we focused on Census Occupation Codes containing the detailed SOC codes of interest. These codes are also listed in Table D.1.

Workers' compensation claims do not contain structured occupation codes; however, we were able to use a validated autocoding algorithm (NIOCCS), developed by NIOSH, to assign occupation codes based on industry codes and on the free-text occupation description field in the WCIS. The algorithm successfully assigned an SOC code to 82.4 percent of claims in the WCIS.

Missing Data and Weighting

WCIS data, like other multipayer administrative data, vary in quality across payers and over time, leading to challenging missing-data problems. We addressed these challenges using an approach developed and extensively applied in past RAND studies. We restricted our analysis sample to claims that had complete data on key variables and were submitted by claims administrators (insurers, TPAs, or self-administered employers) who demonstrated reliable reporting of SROI data. This second restriction (at the claims administrator level) was needed, because many claims administrators appear never to report SROI data, even when they might submit tens or hundreds of thousands of claims to the WCIS. In general, around 30 percent of compensation claims receive indemnity benefits, so it is not plausible that a claims administrator with thousands of claims would not have any indemnity injuries. These restrictions are particularly important in the present study, because data quality has been a challenge for a number of government employers, including those at the local-government level who employ most first responders in California. A related missing-data problem is that many claims with a FROI do not have any medical bills in the WCIS, while many medical bills in earlier years could not be reliably linked to FROI and SROI data from any claim. These so-called orphan claims were widespread before the WCIS medical billing data adopted a new (5010) format in 2016, which also means that the proportion of claims that are missing medical data has fallen over time.

To produce estimates that are representative of all workers' compensation claims filed in the state, we derived weights to ensure that the weighted distribution of observable characteristics of claims with complete records matched the (target) joint distribution of several claims characteristics observed on the FROI: injury year, type of claims administrator (fully insured, TPA, or self-administered), region of California, gender, age, and pre-injury weekly wage. To account for potentially different patterns of missing medical claims data, the weights also forced the final analysis sample of those claims that had usable medical data and complete FROI/SROI data to match the above-listed distributions. The weights were constructed so that the sample would also match three additional weighting targets observed for all claims that had complete FROI/SROI data, regardless of whether medical data were available: the proportion of claims

filed by firefighters, the proportion of claims filed by peace officers, and the proportion of claims receiving indemnity benefits. Under the assumption that the missingness of data (due to incomplete records, unreliable claim administrators, or missing medical bills) is uncorrelated with any of the variables of interest in our analysis, calculations using these weights will be valid estimates for the entire workers' compensation system (i.e., for all workers who file a FROI containing complete data on the target variables). This assumption is debatable, but it is inherently untestable, and we lack support for other specific assumptions that would be needed to develop alternative estimates. Missing data, and the assumptions needed to address missing data, are an unavoidable limitation of research using the WCIS.

Limitations of Quantitative Analyses

The main limitation of our prevalence estimates is that we were unable to directly measure the specific outcomes that were of primary interest to Assemblymember Daly and CHSWC (PTSD and suicide). There are unfortunately no recent, large surveys we are aware of that include direct estimates of posttraumatic stress injuries. The National Comorbidity Study (NCS) includes 2007 estimates of annual PTSD prevalence among adults based on diagnosis code but has very broad occupation categories. Similar limitations rule out the Medical Expenditures Panel Survey Household Component, which also captures diagnosis codes but includes only very coarse occupation categories on the public-use files.

The K6 was not designed to measure PTSD, so its use is a limitation of this study. However, no other survey data specifically measuring PTSD with sufficient sample sizes was available for this study. One study of female prisoners did evaluate the ability of the K6 to identify individuals with PTSD and other diagnosable mental health conditions and found that 58 percent of women who met the diagnostic criteria for PTSD were identified by the K6 as suffering serious mental distress based on the standard threshold (K6 > 12) used in this study (Kubiak et al., 2009). Similar studies have not been done for first responders, however, so we emphasize that our prevalence estimates reflect serious mental distress or mental health conditions more broadly, rather than PTSD specifically.

Prior studies have estimated the prevalence of PTSD among firefighters based on small, targeted surveys (Berninger et al., 2010a; Berninger et al., 2010b; Wagner, Heinrichs, and Ehlert, 1998), but they do not provide evidence on the prevalence of PTSD across the entire workforce, which is the information relevant for analyzing SB 542. Although we do not have data directly measuring PTSD among workers who do not file workers' compensation claims, estimates of the prevalence of serious psychological distress can be thought of as an upper-bound estimate of the prevalence of PTSD. Other limitations apply to our analysis of suicidality; most notably that individuals who successfully complete a suicide attempt cannot answer the CHIS and are thus systematically excluded from our data. We also cannot rule out the possibility that mental health stigma biases responses to the CHIS.

We also note that the prevalence of psychological distress (which we estimate) is not the same as the incidence (which we do not estimate). Prevalence includes people who have ongoing psychological distress as well as those who experience a new onset of a mental health condition. The incidence rate, meanwhile, refers specifically to the probability that a previously unafflicted individual experiences a new onset of mental distress or a mental health condition during a given increment of time. This limitation reflects the available data sources; we are aware of no sources that we could access within the scope of this study that would have allowed us to estimate actual incidence rates for firefighters and peace officers. For this study, then, we treat prevalence as an upper-bound estimate of incidence, and we use a range of potential incidence rates consistent with our estimated prevalence rates in analyzing SB 542's cost impacts.

There are limitations to the WCIS analysis as well—most notably that we can ascertain the presence of PTSD or other medical conditions only when workers seek care for those conditions in the workers' compensation system. Our case-ascertainment approach included diagnoses indicated on denied medical bills, so workers who have sought any type of care for PTSD that is billed to workers' compensation will be captured, regardless of whether these workers' claims (or specific medical bills) were denied. What this approach will not capture, however, is workers who filed a workers' compensation claim but pursued mental health care on a self-pay basis or went without treatment. These cases are, by definition, not observable in workers' compensation claims data, but we learned (in our interviews with workers suffering from mental health conditions) that many workers with PTSD never received PTSD treatment through the workers' compensation system, which would make these cases invisible in the administrative data. This might reflect individual choices driven by mental health stigma or a fear of professional consequences, but as we also learned, in some cases, workers bypassed the workers' compensation system because their departments made other care available to them through alternative delivery models. This could bias the results of our claims-data analyses if the propensity of workers with PTSD to bypass the workers' compensation system is systematically higher or lower for first responders than for workers in similar occupations. There are some reasons to worry that this propensity might be higher for first responders; namely, that some departments directly provide mental health care and that firefighters and peace officers, who have higher incomes than the comparison groups examined here, are likely more able to afford self-paid mental health care. We sketch some directions for future research to address this limitation in the conclusion, but for now readers should be cautioned that all our analyses of claims data reflect only workers who sought mental health care in the workers' compensation system.

3. Posttraumatic Stress, PTSD, and Suicide Among First Responders

This chapter presents past and current evidence on posttraumatic stress and suicide among first responders. We first provide the past evidence and then describe the types of traumas and symptoms experienced by first responders, both from their own perspectives and from the perspectives of applicants' attorneys, mental health providers, and stakeholders who support fire and police departments from within (i.e., chiefs and claims administrators). We then examine the prevalence estimates of mental health conditions for first responders using the California Health Interview Survey (CHIS) and the National Health Interview Survey (NHIS) and show the prevalence estimates of suicidal ideation by occupation. This information answers research questions 1 and 2:

- *RQ1*: Do firefighters and peace officers have a higher incidence of traumatic stress injuries than non-public employees which pose similar exposure to traumatic stress, such as emergency room personnel, security guards, or private ambulance service employees?
- *RQ2*: Do firefighters and peace officers experience a significantly higher incidence of suicide, attempted suicide or other serious mental health conditions than other employees generally?

Note that the research questions are delineated in Chapter 1 and Appendix A.

Past Evidence on Posttraumatic Stress and Suicide Among First Responders

In their jobs as public safety workers, firefighters and peace officers are likely to experience or witness traumatic events, defined as "exposure to actual or threatened death or serious injury" (American Psychiatric Publishing, 2013). Stress resulting from these events, and more particularly from repeated exposure to these events, can take a toll on mental health, which includes the development of PTSD. (See Box 3.1 on other terms used for PTSD.) While it is common for people to have upsetting memories, feel on edge, or have trouble sleeping for a few weeks to a month following a traumatic event, symptoms that continue beyond a month may indicate a diagnosis of PTSD. Criteria for a PTSD diagnosis include intrusive symptoms, persistent avoidance of stimuli associated with the event, negative alterations in cognition and mood, and marked alterations in arousal and reactivity.

Trauma Exposure and PTSD

It is reasonable to suppose that firefighters face a high risk of PTSD, because of the intense nature of their work and their frequent exposure to risk and traumatic events. Skogstad et al., (2013)

Box 3.1. Terms Used to Refer to Posttraumatic Stress

In the legislative debate over SB 542 and other discourse, different terms are used to refer to PTSD, including posttraumatic stress disorder (PTSD), posttraumatic stress injury (PTSI), and traumatic stress injury.

PTSD is a medical condition defined by a specified set of diagnostic criteria, as laid out in the *Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5*). The *DSM*'s first version was introduced in 1980 by advocates of Vietnam War veterans who sought to recognize those suffering from "Post-Vietnam Syndrome."[1] Over the years, modifications have been made to both the name of the syndrome and to the clinical diagnostic criteria. The syndrome has had several other names throughout history, including "shell shock" during World War II.[2]

Because of the alarmingly high rate of suicide in the U.S. Army, the deputy chief of staff, in 2011, advocated that the American Psychiatric Association (APA) rename PTSD to PTSI, to address the perceived stigma of having this diagnosis and help diminish barriers to care. The rationale for this change was that the "D" (for "disorder") in PTSD is believed to increase stigma and discourage treatment-seeking. The replacement term "injury," however, puts the condition on the same level as other honorable physical injuries recognized by the military and, as such, deems it as also worthy of earning a Purple Heart. This position on renaming the condition is also advocated by proponents of peace officers and firefighters,[3,4] who may similarly be subject to greater stigma and barriers to treatment-seeking. In enacting SB 542, the legislature declared, "It is imperative for society to recognize occupational injuries related to posttraumatic stress can be severe, and to encourage peace officers, firefighters, and any other workers suffering from those occupational injuries to promptly seek diagnosis and treatment without stigma. This includes recognizing that severe psychological injury as a result of trauma is not 'disordered,' but is a normal and natural human response to trauma, the negative effects of which can be ameliorated through diagnosis and effective treatment."

Although this campaign for name change launched an important debate in the United States, the APA ultimately decided not to change the name. This debate endures; however, there is as yet no evidence to support this change as having an impact on reducing stigma and barriers to treatment-seeking. **For clarity, we follow the *DSM-5* and use the term *PTSD* throughout the report.**

Sources:

[1] Informit website, undated.

[2] Shephard, 2003.

[3] Stanley, Hom, and Joiner, 2016.

[4] PTSI website, undated.

evaluated various occupations for the risk of PTSD and found that, along with police officers, firefighters and ambulance personnel were among the most likely to be exposed to the kinds of traumatic events that lead to PTSD. Consistent with these studies, Jahnke et al. (2016) documented that repeated exposure to trauma is widespread among firefighters, and Jahnke et al. (2012) shows that concerns about the level of exposure to traumatic events is widespread among firefighters.

A number of studies in the United States and elsewhere have also estimated the prevalence of PTSD and other mental health conditions in various first responder populations. A worldwide systematic review found estimated rates of PTSD prevalence in first responders. United States-based estimates of PTSD prevalence ranged from 3.5 percent to 22 percent in various samples of U.S. firefighters—an enormous range reflecting, in part, differences in whether samples were drawn based on exposure to specific traumatic events (Jones, 2017). One German study found a prevalence rate of about 18 percent among firefighters (Wagner, Heinrichs, and Ehlert, 1998).

A number of studies have documented rates of PTSD among firefighters after sentinel events, such as terrorist attacks or other mass casualty events Berninger et al. (2010a, 2010b) reported an elevated prevalence of PTSD among New York firefighters who were exposed to the World Trade Center disaster even several years after the event. Another study (North et al., 2002) found that about 13 percent of firefighters who responded to the Oklahoma City bombing experienced PTSD (although they noted that this was less than the prevalence among surviving victims of the attack [23 percent]). Estimates of PTSD prevalence among firefighters in the United States have ranged from to 3.5 to as high as 8 percent (Jones, 2017) when broader populations of firefighters (rather than those who responded to sentinel events) were examined.

Studies have also estimated rates of PTSD prevalence in populations of police officers, including populations exposed to highly traumatic sentinel events like the 9/11 terrorist attacks. An estimated 8.3 percent of police officers (13.9 percent of male officers and 7.4 percent of female officers) who responded to 9/11 had diagnosable PTSD two to three years after the attacks (Bowler et al., 2010). Follow-up studies on police who responded to 9/11 indicated a higher PTSD prevalence of 16.5 percent (Cone et al., 2015) five to six years after the attacks. A recent meta-analysis on PTSD after 9/11 noted that it was unusual that the police prevalence rates increased over time, while the other exposed populations under study (e.g., nearby civilians, rescue and recovery workers) showed a PTSD prevalence higher than police immediately after the attack but declining PTSD prevalence over time (Lowell et al., 2018). This difference in dynamics could reflect several factors, both protective (such as greater resilience and trauma relative to general populations) and worrisome (such as reluctance to acknowledge symptoms or to seek care).

Other studies of PTSD prevalence, including those of populations exposed to traumatic events, have found rates between 7 and 18 percent (Violanti et al., 2017). These estimates reflect specific populations, often drawn from single police or fire departments, so generalizability to the full first responder workforce in California is uncertain; population-based estimates of PTSD prevalence and incidence rates among specific occupational groups should be a priority for future research.

Suicide

PTSD places individuals at risk for subsequent suicidal behaviors. Among veterans, PTSD is associated with high rates of suicide (Ramsawh et al., 2014). And among soldiers, suicide risk increases substantially for those with both PTSD and depression (Kimbrel et al., 2016).

Peer-reviewed research on suicide rates among firefighters and peace officers has not uniformly found elevated suicide rates, however. Findings on occupation-specific suicide rates vary, in part because studies have used different methods and estimated different quantities. Broadly speaking, epidemiologists can take two approaches to measuring suicide risk, which answer different questions, as described by Lee and Choi (1999). *Proportionate mortality studies* estimate the proportion of deaths that are caused by suicide (versus another cause), while *cohort*

mortality studies estimate the risk that individuals in a given population will die by suicide in a given timeframe (versus dying of another cause or surviving). Cohort mortality studies are more relevant to the question posed by CHSWC and the legislature (whether first responders are at greater risk of suicide than workers in similar occupations) but are more difficult to carry out than proportionate mortality studies because researchers must estimate the population at risk in order to calculate a suicide rate. These two approaches might yield similar answers about the association between occupation and suicide, but they might do so only under special conditions that are not met in practice.

Several recent proportionate mortality studies have compared the proportion of first responder deaths due to suicide with that of other occupations. Vigil et al. (2021), who examined death records from 26 states, found that suicide was a much more common cause of death for firefighters compared with U.S. workers on average. And Violanti, Robinson, and Shen (2013), who analyzed data from 23 states, also found that suicide is a more common cause of death for police officers (including correctional officers) compared with U.S. workers on average.

However, studies that have estimated the risk of suicide among firefighters and peace officers have not shown that workers in these occupations are more likely to commit suicide than workers in other occupations. Table 3.1 reproduces the recent estimates of occupation-specific suicide mortality rates provided by the Centers for Disease Control (CDC) using data from the National Violent Death Reporting System (NVDRS). The suicide mortality rates in the table are in regard to workers aged 16 to 64, stratified by gender. Rates for female firefighters and police

Table 3.1. Suicide Rates by Occupation, 2016

Occupation	2010 Census Occupation Code	Male Suicide Rate per 100,000 Workers [95% Confidence Interval]	Female Suicide Rate per 100,000 Workers [95% Confidence Interval]
Firefighters	3740	21.7 [13.9, 32.5]	
Police Officers,	3850	25.4 [19.5, 32.6]	
Security Guards, and Gaming Surveillance Officers	3930	28.2 [22.7, 33.7]	
Bailiffs, Correctional Officers, and Jailers	3800	36.0 [25.7, 49.3]	
EMT and Paramedics	3400	39.3 [24.2, 61.0]	
Protective Service Occupations	3700-3955	26.4 [23.7, 29.1]	14.0 [9.9-19.2][a]
All Occupations		27.4 [26.9, 27.9]	7.7 [7.5, 8.0]

NOTES: Adapted from Peterson et al. (2020).

[a] Statistically higher than the population rate (all industries or occupations) based on 95-percent confidence interval (CI) of the industry or occupational group rate not containing the total-population-rate point estimate. The table reports suicide rates per 100,000 civilians, noninstitutionalized working persons aged 16 to 64 years, estimated using 2016 data from the National Violent Death Reporting System data from 32 states. Female suicide rates were not published for firefighters, peace officers, and other detailed occupations in the table due to fewer than 20 suicide deaths in the data.

officers were not reported by Peterson et al. (2020) because the NVDRS captured fewer than 20 female suicides in each occupation; female suicide rates in other detailed protective-service occupations, and in EMTs and paramedics, were not reported for the same reason.

The CDC found that the suicide rates of men in protective service occupations were not statistically significantly higher than rates in the overall male workforce. Women in protective service occupations, in contrast, had nearly double the suicide rate of the overall female workforce. However, this is a broad occupation category that includes large numbers of private security guards and other workers who are not first responders. Nationwide estimates from the Current Population Survey show that, of female workers in protective service occupations, 26 percent were police officers (including sheriff's patrol officers) or first-line supervisors of police officers and detectives, and 2 percent were firefighters, while 17 percent were correctional officers and jailers (or first-line supervisors of correctional officers and jailers), and 28 percent were security guards and gaming surveillance officers. The elevated suicide rate among women in protective services clearly warrants closer attention, but we are unable to conclude from the CDC's estimates whether elevated suicide risk is driven primarily by the occupations of peace officers and firefighters or by other protective service occupations.

Table 3.1 also reports estimated suicide rates in several occupations corresponding to comparison groups used in our study. Male security guards, correctional officers, and EMTs/paramedics have estimated suicide rates that are higher than those of police officers and firefighters and higher than the national average; however, none of these occupation-specific rates are statistically different from the rate for all occupations. As noted above, occupation-specific estimates for women are not available due to the limited number of suicide deaths for these groups in the NVDRS data.

In sum, the CDC estimates did not indicate that male firefighters or peace officers were at an elevated risk of suicide compared with other male workers. However, the worrisome finding that women in protective service occupations do have an elevated suicide rate calls for further research to examine whether those rates among peace officers and firefighters, as opposed to other occupations not targeted by SB 542, account for the elevated numbers.

Apart from studies on mortality rates and the proportions of deaths caused by suicide, researchers have examined other aspects of suicide among firefighters and peace officers. For example, there is evidence of higher in-workplace suicide rates among fire and police officers than in other occupations (Tiesman et al., 2015).

Finally, when researchers examine measures of suicidality, such as suicidal ideation or lifetime suicide attempts (rather than completed suicides), the existing evidence does point toward an elevated suicide risk for first responders. A systematic review of 63 studies of suicidal thoughts and behaviors among first responders (Stanley, Hom, and Joiner, 2016) indicated higher risk of suicide among police officers, firefighters, emergency medical technicians, and paramedics. One study found that one in four career firefighters and one in five volunteer firefighters had considered suicide at some point during their career (National Volunteer Fire

Council, 2008). In addition, recent estimates from a convenience sample of firefighters and non-firefighter EMTs in a southern state found a high prevalence of suicide risk (34 percent at high risk for suicide) (Jones et al., 2018).

Treatment for PTSD

PTSD can be treated effectively with appropriate trauma-informed mental health care. A broad range of evidence-based psychotherapies and medications are available and recommended by clinical practice guidelines for treating adults with PTSD. These include the Department of Veterans Affairs and Department of Defense Clinical Practice Guidelines for the Management of PTSD (2017) and Acute Stress Disorder as well as the American Psychological Association's guidelines (2017) on treating adults with PTSD. Refer to Chapter 6 on the access and timing of mental health treatment for first responders.

Unfortunately, there are a number of barriers that deter access to treatments for PTSD. For example, concerns about stigma may discourage people from seeking care for mental health problems or cause them to deny the problem altogether (e.g., Link et al. [1999]). Stigma is defined as "social ostracism of persons who have a socially undesirable attribute or characteristic including the actual attitudes, beliefs, and actions held by the public toward a person or a condition related to dangerousness, blame, social distance and fatalism" (Fitzpatrick, 2008; Goffman, 1963). Note that this is a description of "actual" stigma as opposed to "perceived" stigma, or a fear of ostracism. Findings from the National Comorbidity Survey (NCS) suggest that individuals with PTSD may not seek treatment largely because they do not perceive a need for services. For example, over 60 percent of NCS respondents who met diagnostic criteria for PTSD reported not having a problem that required treatment (Kessler, 2000). Indeed, individuals with PTSD are less likely to perceive a need for treatment (68 percent) than individuals with panic disorder (78 percent) or depression (83 percent) (Meadows et al., 2002). In addition, lengthy periods of time can elapse before individuals with PTSD first seek treatment (Wang et al., 2005b). A mere 7 percent of individuals with PTSD make treatment contact within the year of its onset, as compared with 37 percent and 33 percent of individuals with major depression and panic disorder, respectively (Wang et al., 2005a). Recent ethnographic research has confirmed that first responders are subject to many of these barriers, as well (Jones et al., 2020).

Next, based on transcripts and information from our interviews, we will describe the types of traumas and symptoms experienced by firefighters and peace officers, both from their own perspectives and from the perspectives of applicants' attorneys, mental health providers, and stakeholders that support fire and police departments from within (i.e., chiefs and claims administrators).

Types of Traumas and Symptoms Experienced by First Responders

In our discussions with first responders, applicants' attorneys, mental health providers, and other key stakeholders that work within and support fire and police departments (i.e., chiefs and claims administrators), we heard about traumatic stress exposure, traumatic stress injuries, suicide, and other serious mental health issues and symptoms.

Below we provide quotes from the various types of stakeholders. Following each quote, we indicate the respondent type in italics (i.e., *Northern California firefighter*) followed by the blinded, unique interview identifier.

First Responders' Experiences

Traumas. We asked the firefighters and peace officers we interviewed to recount their on-the-job exposure to traumatic incidents as well as the stress and traumatic stress injuries this caused them. Almost all of the first responders described the traumas they had witnessed on the job ($N = 11/13$); only two preferred not to describe the details of the traumas witnessed. All 13 first responders indicated that they had a PTSD diagnosis; their workers' compensation claims were for PTSD or cumulative stress or both, and a few claims had been combined with physical claims. Two peace officers had sought treatment but had not filed a workers' compensation claim (see Chapter 4 for details on the claims).

Among peace officers, it was common to witness a shooting incident; some reported also seeing accidents caused by driving under the influence, plane crashes, mass-murder incidents, and lethal-force encounters. Firefighters described exposure to a variety of traumatic experiences on the job, such as arriving on the scene and finding an adult family member had murdered the kids (by drowning or shooting) and then committed suicide, witnessing someone being burned in a fire, seeing vehicle crashes involving several parties and resulting in the death of children or teens. Both police officers and firefighters often mentioned incidents where individuals had died by suicide with a gun and where domestic violence had led to the death of young children. Both applicants' attorneys and first responders commented that, in many cases, the incidents that involved children were particularly gruesome and would affect those first responders who had children more. One firefighter shared,

> It was an [XX_TEEN] year-old boy who shot himself. It is hard not to associate seeing my daughter on a gurney like this boy was. It is not my first gunshot or kid call, or my first fatality. I had to dig for bodies for 18 days in a fire. I have seen so many people die, it is ridiculous. Even my first ever call was a [XX_TEEN]-year-old boy who died. It has been a career full of good times, but a lot of death and carnage. —*Northern California firefighter (FN-FR01)*

Police and firefighters alike commonly mentioned incidents related to suicide, which included responding to calls that involved the suicide of an adult or teen, witnessing a suicide, or knowing colleagues who had died by suicide, either while on the job or soon after retirement. A firefighter stated,

> Another one [trauma was a] mom and dad are divorced, and dad comes over. Mom asks him to go grocery shopping, she pulls out a revolver, she killed him and killed a kid downstairs and had a dead kid in bed with her when we arrived. Another, a dad goes upstairs to get ready to eat dinner. He comes down and killed everyone. Wife got out and was on the lawn. He thought she was dead. He also killed himself. I could go on for days. *—Northern California firefighter (FN-FR02)*

Mental health professionals were direct about the consequences of not dealing with the traumas and exposures experienced by first responders, as well as the impact it had not only on the individuals but also on the cities and departments for which they work. One mental health provider indicated the following:

> With first responders, I say, "Pay now or pay later." So, I say, "Pay now for treatment, rather than pay later for a retirement claim or a suicide." As a city or department, you are going to pay a lot more later. *—Southern California mental health provider who treats peace officers (PS-MH02)*

Applicants' attorneys noted that first responders often responded to multiple traumatic incidents, especially shootings or other violent events. Being involved in incidents where there was violence toward the first responder was most common among police officers. Police officers also tended to report having military backgrounds (and a few with traumatic childhoods), where they experienced trauma (either in combat or in their homes) even before entering their current occupation. Our firefighter sample did not include military veterans. A couple of applicants' attorneys pointed out the following:

> First responders experience dramatic events that are extraordinary: suicide, gun fights, auto accidents, death, death of children . . . coping skills are finally exhausted and then *boom,* the trigger [to a mental health injury]. Then there are single events: A shooting. A colleague shot and killed. I have had officers who have been attacked. These things happen more than people are aware. *—Southern California urban applicants' attorney (AA-SU01)*

> First responders are witness to violent crimes. That is universal. Street crime, abuse. For example, there is a place near here that people commit suicide, so witnessing those things are traumatic. Also, first responders are often victims of an attack. *—Southern California nonurban applicants' attorney (AA-SR02)*

In contrast, firefighters reported being involved in large fires where they were either burned or engaged in firefighting for prolonged periods of time. One applicants' attorney also mentioned that female first responders dealt with sexual harassment on the job that lead to stress and trauma.

Symptoms. The majority of first responders reported having sleeping troubles and family problems as a result of their PTSD-related anger or detachment. Symptoms associated with witnessing suicide among civilians and/or colleagues and other work-related traumas included anxiety, self-isolation, hypervigilance, flashbacks, and high blood pressure. A few first responders also noted uncontrollable drinking, substance use, depression, and gastrointestinal issues such as constipation and diarrhea. An applicants' attorney said the following:

> A lot of firefighters and police officers are able to function at work, but they have poor sleep, have nightmares. When it gets bad, they are short with people and short with their family. They are angry and don't know why. *—Northern California nonurban applicants' attorney (AA-NR02)*

Often, those who reported having trouble sleeping reported having nightmares related to their traumatic incidents. First responders reported that their symptoms built up over time and tended to worsen as they continued to work and experience additional traumas. One firefighter recalled the following:

> I had anxiety, nightmares, sleep deprivation, and difficulty going to bed . . . . It is compounded by sleep deprivation because you have to respond to calls [on the job]. This leads to heightened anxiety and awareness. Every 911 call, it is like adding a file to your rolodex. We are constantly in scenarios that remind us of other traumas. *—Northern California firefighter (FN-FR05)*

The majority of first responders also reported having experienced panic attacks and anxiety, self-isolation, hypervigilance, flashbacks, and high blood pressure. Every first responder reported multiple symptoms related to their mental health condition. A firefighter shared this:

> For me, it was because the kid calls took a toll on me; mine got to the point where the trauma was overflowing. So, this time, I talked to someone at work to get help. I was not sleeping, having panic attacks, I would sit and cry. A lot had built up. *—Northern California firefighter (FN-FR12)*

Stakeholder Perspectives about First Responder Traumas and Symptoms

The most common trauma reported by other department stakeholders was cumulative stress or cumulative trauma. Most first responders, as part of their job, respond to a range of traumatic calls, given that they are often the first to arrive on-site and engage as paramedics. Police officers and firefighters in urban areas experience roughly 20 to 30 intense or traumatic calls per shift, whereas nonurban first responders experience roughly five to six traumatic calls per shift. The most common calls that led to high levels of stress are officer-involved shootings, suicides, and incidents that involve children. Police Department stakeholders reported officer-involved shootings more often than Fire Department stakeholders. A claims administrator explained,

> There was an incident that happened before I got here. . . . A lot of officers had PTSD and stress for that incident. The submission of the WC claims staggered; they all went back to work but it was a staggered filing of the claims after each of the officers could not take it anymore. *—Northern California claims administrator for peace officers (PN-CA02)*

The most common symptoms of trauma experienced by first responders, as reported across the various types of interviewed stakeholders, were anger and family problems. Department stakeholders also mentioned chronic pain, anxiety or panic attacks, and trouble sleeping as common symptoms. The discussions about symptoms were similar in Police Departments and Fire Departments. A mental health provider expounded:

> In studies, chronic pain with PTSD and sleep issues are highly correlated. If you have PTSD and are not having some comorbid issue, that is highly unlikely. PTSD is a devastating disorder. You have all kinds of problems. When the client with PTSD comes in, you get all of those problems combined. *—Southern California mental health provider who treats firefighters (FS-MH02)*

In short, our interviews confirmed previous research findings that both firefighters and peace officers are frequently exposed to traumatic events; the nature of their work also makes cumulative exposures and retraumatization very likely.

Mental Distress and Suicidal Ideation in California's First Responders

The interview findings presented above illustrate some of the traumatic exposures experienced by firefighters and peace officers in California. The interviews do not, however, reveal whether first responders' exposure to traumatic stress results in a higher prevalence of traumatic stress injuries, other mental health conditions, or suicidality in comparison with workers in similar occupations—a question identified by Assemblymember Daly and CHSWC as being important for evaluating the rationale for SB 542.

To address this question, then, we used the 2013–2019 CHIS to estimate the prevalence of mental distress and suicidality in California's first responders. Occupation questions were not included in the CHIS before 2013, and 2020 data is not yet available as of the time of this writing. As discussed in Chapter 2, we compared firefighters and peace officers with comparison groups of workers in a composite group of other occupations selected because they have similar job characteristics to first responder work, as well as specific occupations (ambulance drivers, emergency medical technicians, security guards, and correctional officers) known to face high levels of traumatic exposures on the job. All estimates from the CHIS used sampling weights, and so are valid estimates of the average characteristics of workers in California during the 2013–2019 time period (with each year between 2013 and 2019 weighted equally). Additional details on our methods, including definitions of outcome measures and comparison groups, are presented in Chapter 2 above and in Appendix C.

Table 3.2 describes the demographics and selected other characteristics of California first responders and workers in comparison occupations. The first two columns of the table compare first responders (firefighters and peace officers pooled together) and a comparison group of occupations that are similar to either firefighters or peace officers. The last column reports these statistics for all workers in California ("All Workers"), providing an overview of how first responders differ from the overall California workforce. Unweighted sample sizes reflecting the number of survey respondents in each category are reported in the last row of the table: we observed 479 first responders in the CHIS, 5,764 workers in comparison occupations, and 73,969 workers in total across all occupations.

Some dramatic demographic differences between first responders and the overall California workforce are immediately apparent. While 46 percent of all workers in California are female, only 15 percent of first responders are female. First responders are also younger than the average worker in California, with somewhat fewer first responders aged 50 to 64 and almost none aged 65 or over. First responders are three times more likely to be military veterans and are 12 percentage points more likely to have health insurance coverage. The racial and ethnic

Table 3.2. Demographics of First Responders and Comparison Groups, 2013–2019 CHIS

Occupation Group	First Responders and Comparison Groups		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				All Workers
	First Responders	First Responder Comparators	Firefighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
Characteristics:										
% Female	14.6%	24.2%	2.4%	15.5%	38.5%	19.0%	32.9%	11.5%	22.3%	45.6%
Mean Age	40.5	43.1	39.0	42.4	29.9	41.1	43.2	38.1	39.8	41.1
% Aged 18–39	49.1%	42.2%	55.4%	43.8%	90.6%	46.7%	43.2%	58.0%	56.4%	48.6%
% Aged 40–49	32.2%	24.1%	24.7%	24.8%	NA - masked	34.9%	22.6%	19.3%	20.7%	19.8%
% Aged 50–64	18.3%	29.0%	19.8%	27.1%	NA - masked	17.8%	29.2%	18.8%	22.9%	25.5%
% Aged 65+	0.5%	4.7%	0.1%	4.3%	NA - masked	0.6%	5.0%	4.0%	0.0%	6.0%
Veteran?	15.8%	8.3%	9.6%	8.2%	NA - masked	18.1%	8.4%	14.9%	15.5%	5.1%
Currently Insured? (%)	98.8%	88.1%	99.5%	85.2%	45.1%	98.5%	91.4%	79.6%	99.9%	87.1%
White Non-Hispanic	59.3%	44.9%	75.6%	40.2%	58.7%	53.4%	47.7%	23.3%	43.2%	38.8%
Hispanic, Any Race	24.8%	34.0%	17.5%	40.3%	30.2%	27.6%	27.2%	36.3%	52.9%	37.9%
Black Non-Hispanic	6.6%	4.9%	NA - masked	3.2%	NA - masked	8.9%	5.7%	24.1%	3.9%	5.5%
AIAN Non-Hispanic	0.6%	0.5%	2.0%	0.5%	0.0%	NA - masked	0.3%	NA - masked	NA - masked	0.3%
Asian Non-Hispanic	4.7%	13.8%	NA - masked	14.0%	9.9%	6.3%	17.0%	6.7%	NA - masked	15.0%
NH/PI Non-Hispanic	1.6%	0.6%	3.9%	0.2%	0.0%	0.8%	0.7%	1.7%	NA - masked	0.4%
2 or More Races, Non-Hispanic	2.3%	1.3%	NA - masked	1.5%	NA - masked	3.1%	1.4%	8.0%	NA - masked	2.0%

Occupation Group	First Responders and Comparison Groups		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				All Workers
	First Responders	First Responder Comparators	Firefighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
Geography										
Live in Northern California (%)	41.1%	39.4%	49.2%	40.0%	46.4%	38.2%	40.2%	38.2%	52.5%	36.2%
Live in Urban Area (%)	91.9%	96.6%	83.1%	96.7%	91.0%	95.1%	96.9%	98.0%	79.4%	97.3%
N (unweighted)	479	5,764	136	3,068	75	343	4,236	373	124	73,969

NOTES: Authors' calculations, 2013–2019 CHIS. AIAN = American Indian/Alaska Native. NH/PI = Native Hawaiian/Pacific Islander.

composition of first responders also differs from the overall California workforce, with higher proportions of White Non-Hispanics and Black Non-Hispanics and lower proportions of Hispanics and Asian Non-Hispanics. There are differences in the geographic distribution of first responders as well, with first responders more likely to live outside Southern California and less likely to live in urban areas. There are also demographic differences between first responders and the comparison group, but on most dimensions, the comparison group's demographic characteristics are less different from those of first responders than are the characteristics of the overall California workforce. The notable exception is age: the comparison group is even older, on average, than the first responder workforce, with a mean age of 43.1, compared with 40.5 for first responders.

Reading across the table, the next three columns compare firefighters with their comparison occupations and with a category containing ambulance drivers and EMTs. (We combined these two occupations because the sample of ambulance drivers in the CHIS was too small to produce informative estimates.) Firefighters are nearly entirely male, with only 2.4 percent being female. The firefighter comparison group is 16 percent female, while ambulance drivers and EMTs are 39 percent female. Age distributions are also somewhat different across these occupations: the firefighter comparison group is older, on average, while ambulance drivers and EMTs are much younger, with 91 percent aged 18 to 39. Firefighters have higher rates of health insurance coverage, especially compared with ambulance drivers and EMTs (a majority of whom were uninsured); they are also more likely to live outside Southern California and much less likely to live in urban areas. The sample sizes available for these groups are 136 for firefighters, 3,068 for the firefighter comparison group, and 75 for ambulance drivers and EMTs.

The next four columns compare peace officers with their comparison occupations, with security guards, and with correctional officers. Peace officers are younger, on average, than those in their comparison group but are older, on average, than security guards or correctional officers. About one in five (19 percent) peace officers are female, compared with 33 percent of their comparison group, 12 percent of security guards, and 22 percent of correctional officers. Eighteen percent of peace officers are veterans, slightly higher than the proportion of security guards (15 percent) and correctional officers (16 percent) and more than twice as high as the proportion of the comparison group (8 percent) who are veterans. Essentially all peace officers (99 percent) and correctional officers (100 percent) have health insurance, compared with 91 percent of comparison occupations and 80 percent of security guards. Peace officers are more likely to be White Non-Hispanic (53 percent) than those in their comparison group (48 percent), security guards (23 percent), or correctional officers (43 percent). Other large racial/ethnic differences are also evident: security guards, especially correctional officers, are more likely to be Hispanic, and they are three times more likely than peace officers to be Black. The geographic distribution of peace officers is similar to that of their comparison group and of security guards, while correctional officers are much more likely to live in Northern California (53 percent compared with 38 percent of peace officers) and less likely to live in urban areas (79 percent

compared with 95 percent of peace officers). The sample sizes available for these groups are 343 for peace officers, 4,236 for their comparison workers, 373 for security guards, and 124 for correctional officers.

Prevalence of Mental Distress by Occupation

Table 3.3 reports the estimated prevalence of mental distress by occupation for California workers between 2013 and 2019. As discussed in Chapter 2, serious mental distress means that an individual experienced sufficiently severe and frequent symptoms of mental health conditions over the past year that they are likely to suffer from diagnosable serious mental illness. Table 3.3 also reports the prevalence of moderate mental distress, which reflects a level of symptom severity that indicates individuals are unlikely to have serious mental illness but that they are likely to benefit from mental health treatment and may experience some functional impairment due to their mental health. Both of these measures are derived from the Kessler K6 scale, and we report the average K6 score by occupation in Table 3.3. K6 scores range from zero to 24, with higher scores indicating more severe mental distress; serious mental distress is defined as a K6 score of 13 or higher, while moderate mental distress is defined as a K6 score of five to 12. See Chapter 2 and Appendix C for more details.

We estimate that the prevalence of serious mental distress is 1.3 percent for first responders as a whole, with a very similar prevalence rate for firefighters (1.2 percent) and peace officers (1.3 percent). This is lower than the 3.6-percent prevalence rate observed among the overall California workforce. Estimated rates of serious mental distress appear to be higher in each of the comparison groups that we examined, but we caution that none of these differences are statistically significant at the 10-percent level, given the limited sample sizes of first responders and the fact that serious mental distress is relatively rare. Firefighters have a lower estimated prevalence of serious mental distress (1.2 percent) than their comparison group (2.3 percent) or ambulance drivers and EMTs (4.1 percent). Peace officers, similarly, have a lower estimated prevalence of serious mental distress than their comparison group (2.2 percent) or security guards (5.3 percent), while no correctional officers in our sample reported serious mental distress (a 0-percent estimated prevalence). We reiterate that these differences are not statistically significant at the 10-percent level.

Turning to moderate mental distress, our estimates suggest a broadly similar story, but with more pronounced differences between firefighters and peace officers. We estimate that 15 percent of first responders experience moderate mental distress, compared with 24 percent of comparison workers and 28 percent of the overall California workforce. The prevalence of moderate mental distress is higher among firefighters (26 percent) than among peace officers (11 percent). Firefighters had very similar prevalence rates to their comparison group (a 25-percent prevalence of moderate mental distress) and a somewhat lower prevalence than ambulance drivers and EMTs (a 37-percent prevalence). Peace officers had the lowest prevalence of moderate mental distress of any occupation group studied here; they had prevalence rates that

Table 3.3. Prevalence of Serious or Moderate Mental Distress by Occupation, 2013–2019 CHIS

Occupation Group	First Responders and Comparison Groups			Firefighters and Comparison Groups		Peace Officers and Comparison Groups				All Workers
Occupation	First Responders	First Responder Comparators	Fire-fighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
Serious Psychological Distress (K6 > 12)	1.3%	2.2%	1.2%	2.3%	4.1%	1.3%	2.2%	5.3%	0.0%	3.6%
Moderate Psychological Distress (5 ≤ K6 ≤ 12)	14.7%	24.1%**	26.0%	25.3%	37.2%	10.5%	24.6%***	33.3%***	18.5%	28.3%
Mean K6 Score	2.5	3.2***	2.7	3.3	3.7	2.4	3.3**	4.4***	2.9	3.8
N (unweighted)	479	5,761	136	3,068	75	343	4,236	372	124	73,969

NOTES: Authors' calculations, 2013–2019 CHIS. Statistical significance was tested for differences between each non-first-responder occupation group and the corresponding first-responder occupation group (first responders, firefighters, or peace officers).

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

were less than half those observed among their comparison workers (25 percent) or security guards (33 percent) and that were somewhat lower than among correctional officers (19 percent). Average K6 scores across occupations align with these differences in the prevalence of mental distress.

Prevalence Estimates of Suicidal Ideation and Suicide Attempts by Occupation

Table 3.4 reports the estimated prevalence of suicidality—measured primarily as any lifetime history of suicidal ideation—by occupation. First responders are less likely (4.3 percent) than those in comparison occupations (9.5 percent) to ever have experienced suicidal ideation, and their lifetime suicidal ideation rate is also lower than that observed for the overall California workforce (10.6 percent). Firefighters had a 2.7-percent prevalence of lifetime suicidal ideation, lower than the rates observed in their comparison group (9.7 percent) and far lower than the rates observed among ambulance drivers and EMTs (19.1 percent). Peace officers had a higher suicidal ideation rate (4.9 percent) than firefighters (2.7 percent), but this rate was also lower than the estimated rates for comparison workers (10.3 percent), security guards (12.5 percent), and correctional officers (7.3 percent). Differences in estimated lifetime suicide attempts broadly align with differences in suicidal ideation.

Summary of Findings

Although our analysis of the CHIS was limited by relatively small samples of peace officers and firefighters, we can say that the data did not show evidence that mental distress or suicidality is more prevalent among California's first responders than among workers in similar occupations. Estimates of mental distress prevalence were not statistically significantly different across occupations, but we did find significantly lower rates of suicidal ideation among firefighters and peace officers compared with workers in similar occupations. The analysis in this chapter also highlighted differences between first responders and workers in similar occupations in the prevalence of moderate mental distress and suicidal ideation. Moderate mental distress was less prevalent among peace officers than among workers in similar occupations, and lifetime suicidal ideation was less common among both firefighters and peace officers than among workers in similar occupations.

Assuming that these occupational differences are not driven by occupational differences in mental health stigma or other sources of reporting error, the evidence in this chapter does not seem to indicate that mental health among firefighters and peace officers is worse than that observed among workers in similar occupations.

We should be clear that a presumption for PTSD may be justified, however, even though our estimates do not indicate that first responders have worse mental health than similar workers. We measured mental distress, but we did not measure PTSD, and so our estimates do not directly address the question of how PTSD prevalence varies across occupations. Even if we had

Table 3.4. Prevalence of Suicidal Ideation or Lifetime Suicide Attempts by Occupation, 2013–2019 CHIS

Occupation Group	First Responders and Comparison Groups		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				All Workers
Occupation	First Responders	First Responder Comparators	Firefighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
Suicidal Ideation										
% Ever Thought About Suicide	4.3%	9.5%*	2.7%	9.7%*	19.1%**	4.9%	10.3%*	12.5%*	7.3%	10.6%
% Thought About Suicide in Last Year	0.8%	2.4%	0.2%	2.5%**	4.2%**	1.0%	2.5%	1.9%	0.5%	2.7%
Suicide Attempts										
Ever Attempted Suicide?	0.3%	2.6%*	0.0%	2.5%	4.9%	0.5%	3.0%	4.2%*	0.6%	3.4%
N (unweighted):	479	5,761	136	3,065	75	343	4,235	372	124	73,936

NOTES: Authors' calculations, 2013–2019 CHIS. Statistical significance was tested for differences between each non-first-responder occupation group and the corresponding first-responder occupation group (first responders, firefighters, or peace officers).

* $p < 0.10$

** $p < 0.05$

*** $p < 0.01$.

Box 3.2. Answers to Research Questions 1 and 2 Posed by CHSWC

RQ1: Do firefighters and peace officers have a higher incidence of traumatic stress injuries than non-public employees which pose similar exposure to traumatic stress, such as emergency room personnel, security guards, or private ambulance service employees?

A*: We were unable to produce estimates of PTSD incidence or prevalence due to data limitations. However, analysis of two representative health interview surveys, one national and one for California, did not find that the prevalence of serious mental distress (i.e., symptoms predictive of serious mental illness) was higher among firefighters and peace officers than among workers in similar occupations. We found significantly lower rates of moderate mental distress in peace officers than among workers in similar occupations, but no statistically significant differences in moderate mental distress between firefighters and workers in similar occupations. Lower prevalence rates are suggestive of lower incidence rates, but note that representative estimates of occupation-specific incidence rates were not available and that gathering them was not within the scope of this study.*

RQ2: Do firefighters and peace officers experience a significantly higher incidence of suicide, attempted suicide or other serious mental health conditions than other employees generally?

A*: Not for men, but possibly for women. The most recent nationwide estimates of occupation-specific suicide mortality rates from the CDC do not show that male firefighters or peace officers are at elevated risk of suicide compared with the overall male workforce. Women in protective service occupations did have elevated suicide mortality rates compared with all female workers, but published estimates do not indicate whether this is driven by higher suicide mortality rates among firefighters and peace officers or by higher suicide mortality rates among other protective service occupations with substantial female employment. Estimates from household survey data that are representative of California showed a lifetime prevalence of suicidal ideation in firefighters and peace officers that was statistically significantly lower than that in workers in similar occupations.*

evidence that the prevalence of PTSD was lower among first responders than among other trauma-exposed occupations, such evidence would not be a valid basis for concluding that the presumption established by SB 542 is unwarranted. In particular, our estimates are likely subject to the healthy worker effect, which, in this context, would suggest that workers who are prone to mental health conditions or who are less resilient to trauma may also be less likely to work as firefighters and peace officers, due to both self-selection and rigorous preemployment screening. Peace officers and firefighters have exceptionally demanding jobs (see Appendix D for a comparison of O*Net job demands with other occupations), and findings from our qualitative interviews are consistent with the presence of a healthy worker effect in this context. In light of the healthy worker effect, it could simultaneously be true that first responders are in better mental health than workers in similar occupations and that their exposure to traumatic events in the line of duty places them at risk for PTSD.

Our prevalence estimates have implications for the public health benefit and the employer costs associated with SB 542. The fact that mental distress appears to be less prevalent among first responders suggests that the proportion of workers likely to file workers' compensation claims for PTSD or other mental disorders may be lower than in other similar occupations (e.g., if a similar presumption were extended to ambulance drivers, EMTs, security guards, or correctional officers). If, however, the population of first responders with psychological distress is relatively limited, then the cost of the SB 542 presumptions might also be more modest than

one would infer from PTSD estimates or from the prevalence of mental health conditions for the general working population. We will return to these issues and quantify the implications of these estimates for the cost of the presumption in Chapter 7.

Limitations

An important limitation of the evidence base for occupation-specific suicide rates (including both proportionate mortality studies and estimates of mortality rates like the CDC estimates reported in Table 1) is that suicide mortality rates among first responders may be poorly measured (Heyman, Dill, and Douglas, 2018). While there are many challenges in estimating mortality rates across occupations, the most worrisome limitation is that first responder suicides are known to be differentially underreported (compared with other occupations). This underreporting has been attributed to coroners and medical examiners misrepresenting the cause of death, an action that may be driven by stigma and a desire to "protect" surviving family members. A 1996 validation study comparing the accuracy of cause-of-death reports for police and other municipal workers estimated that about one in six police suicides were misclassified as "undetermined," and this misclassification rate was substantially higher when female or Black officers died by suicide. Heyman, Dill, and Douglas (2018) discuss specific policies that may perpetuate the stigma surrounding police officer suicides and incentivize coroners and medical examiners to misclassify peace officer deaths.

We were unable to study the prevalence of PTSD in the general population due to the lack of survey data specifically measuring PTSD. Even though the K6 is not designed specifically to detect PTSD, it represented the best available measure of mental health status in data that could be analyzed within the scope of this study. We also acknowledge that the K6 scoring rules were developed in general adult populations. In the absence of K6 scoring rules developed or validated specifically for public safety workers, however, there is no reason to think that a different scoring approach would be more informative.

The survey data used in this study are self-reported, and we cannot rule out the possibility that perceived mental health stigma may affect our estimated prevalence rates. Our use of confidential survey data should help to reduce mental health stigma, however, compared with other measurement strategies (such as reviewing claims data or asking about past diagnoses). Specifically, the K6 is worded in a way that is likely to minimize stigma, because the questions ask about the occurrence of specific symptoms rather than forcing individuals to attribute a label or diagnosis to themselves. Stigma-driven bias in survey responses may be a more relevant concern for questions about suicidal ideation and past suicide attempts, which cannot be elicited indirectly. Although we cannot rule out the possibility that mental health stigma affects responses to the CHIS, our estimates of comparisons across occupations can still be informative, unless stigma is systematically stronger (or weaker) in first responders than in the other occupations examined. While this is plausible, it is something for which we lack data to either refute or substantiate.

4. PTSD in California's Workers' Compensation System

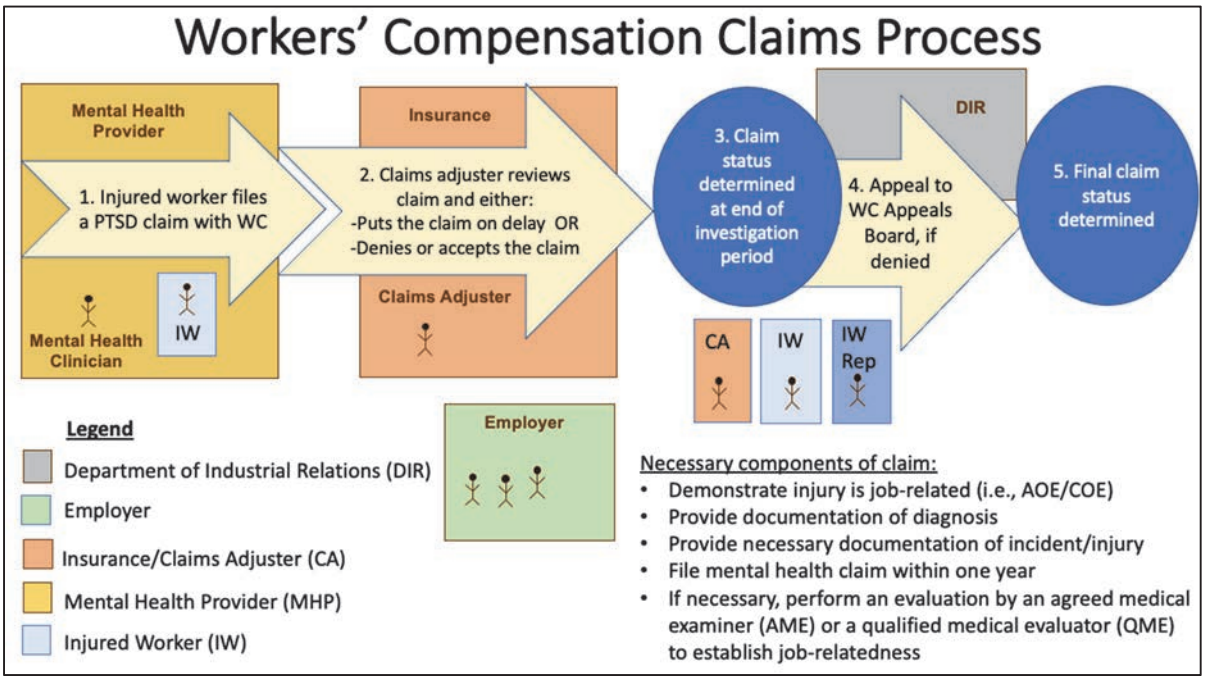
This chapter describes the processes involved in filing mental health claims for first responders as well as the various outcomes of those claims. Drawing on a review of the rules and regulations pertaining to workers' compensation claims filing, we look at the mechanics and timelines involved in filing and processing mental health claims within the larger workers' compensation system. We present the experiences of first responders and the applicants' attorneys who represent them in regard to types of mental health claims, delays in the claims process, initial claim denials, and final claim status. We then discuss experiences with claim delay, denial, and acceptance from the perspectives of mental health providers and stakeholders who lead or work with fire and police departments (i.e., chiefs and claims administrators). Finally, we present WCIS data on the types of claims filed for mental health conditions, the rates of filing such claims, and the claims outcomes. This information answers research questions 4, 8, and 9 and addresses parts of research questions 3 and 5:

- **RQ3:** Are claims by firefighters and peace officers for mental health conditions denied under circumstances where the condition appears to be job-related but the employee has/d difficulty proving that fact, and is/was the rate of denial statistically different from other claims by firefighters (or peace officers) that are subject to presumptions of compensability? NOTE: As part of the response to this question, the contractor should analyze the denial rates of claims subject to presumptions of compensability, whether denial rates are different based upon the entity adjusting the claims (third-party administered (TPA), self-administered, or insured) and describe the ultimate disposition of denied claims, either upheld or reversed.
- **RQ4:** Do firefighters and peace officers file claims for mental health conditions at a rate statistically different from other employees?
- **RQ5:** Are claims by firefighters and peace officers for mental health conditions denied under circumstances where the condition appears to be job-related, but the employee has difficulty proving that fact, and is the rate of denial statistically significantly different from other claims and from other types of employees?
- **RQ8:** Of the claims that involve mental health conditions, what percentage of these claims were primarily for mental health issues, and what percentage of these claims involved a mental health claim as a compensable consequence to a claim for physical injuries?
- **RQ9:** To what extent are mental health claims filed by public safety officers post-separation/termination claims, as opposed to claims for which the employer had notice during the term of employment?

Overview of Workers' Compensation Claims Process

The workers' compensation claims process is a multistep process that includes a range of stakeholders and sub-processes that move a claim from application to final claim status (see Figure 4.1).

Figure 4.1. Workers' Compensation Claims Process



SOURCE: Based on California Department of Industrial Relations, 2016.

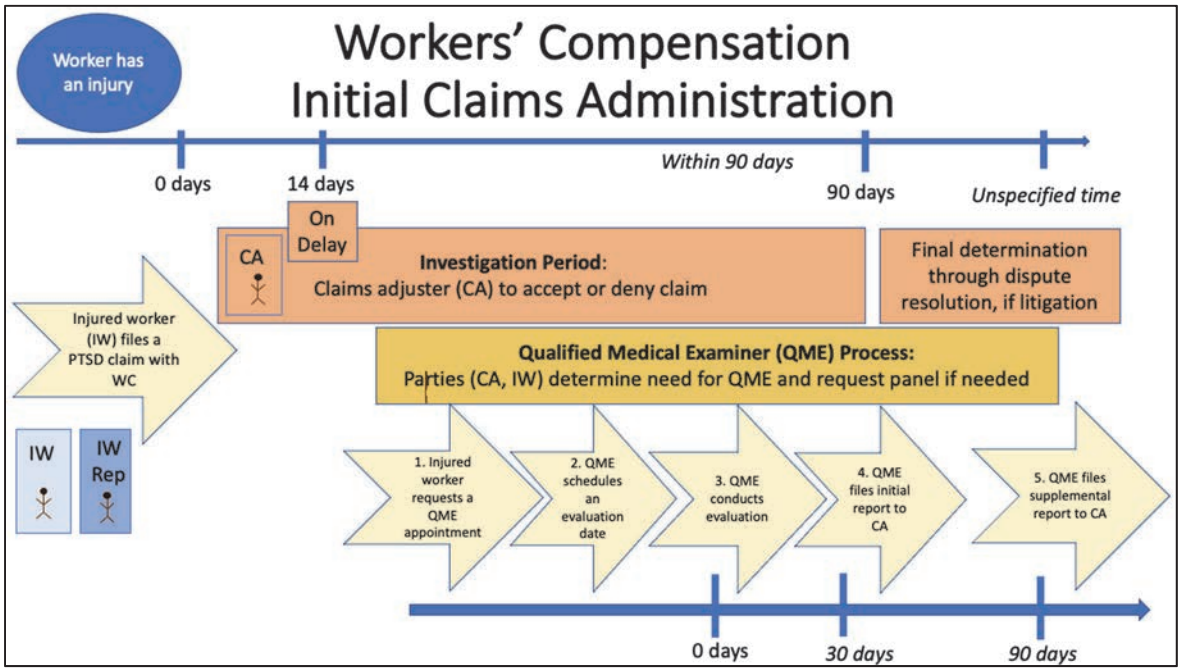
Claims can be filed using a Division of Workers' Compensation (DWC) DWC-1 form (Department of Industrial Relations, State of California, 2021) or Form 5021, known as the Doctor's First Report of Occupational Injury or Illness (Department of Industrial Relations, State of California, 2020); this can be filed within a year of the incident or injury. This applies to all injuries, including PTSD, cumulative stress, or another psychiatric condition. Every physician (as defined in California Code, Labor Code 3209.3) who attends to an injured employee must file Form 5021 within five days of the patient's initial examination. "Physicians," as specified in the Labor Code, include physicians and surgeons holding an M.D. or D.O. degree, psychologists, acupuncturists, optometrists, dentists, podiatrists, and chiropractic practitioners who are licensed by, and acting within the scope of, their practice as defined by California state law. "Psychologists" must be licensed psychologists with a doctoral degree in psychology or a doctoral degree deemed equivalent for licensure by the Board of Psychology pursuant to Section 2914 of the Business and Professions Code. Psychologists must also either have at least two years of clinical experience in a recognized

health setting or meet the standards of the National Register of Health Service Providers in Psychology.

The forms need to reference the date, time, location, and nature of the injury. Technically, the one-year timeframe starts as of the date of one of the following: the injury, the last payment of disability benefits, or the last medical treatment (refer to California Code, Labor Code 5405). Once a workers' compensation claim is filed, a claims administrator (either in a self-insured department or as a TPA) reviews the claim. The claims administrator can either deny the claim, accept the claim, or put the claim on delay within 14 days of its filing. The claims administrator has 90 days to conduct an investigation and make a final determination.

When filing a claim, a worker needs to include documentation of the incident and/or injury, documentation that demonstrates that the injury is job-related (i.e., arising out of employment [AOE] or course of employment [COE]), and a diagnosis by a "physician" (as defined above and including psychologists) substantiating the claim. Either party (i.e., the injured worker or the claims administrator) may determine the need for a qualified medical examiner (QME) and request a panel. The QME evaluation can be used to establish a diagnosis or to determine the job-relatedness of the injury. If a claim is denied, the injured worker, often in consultation with an applicants' attorney who works to represent the worker, can appeal the decision to the Workers' Compensation Appeals Board (WCAB). The WCAB then makes a final determination on the claim. See Figure 4.2 for an overview of the multiple steps embedded within the initial workers' compensation claims-administration process.

Figure 4.2. Workers' Compensation Initial Claims Administration

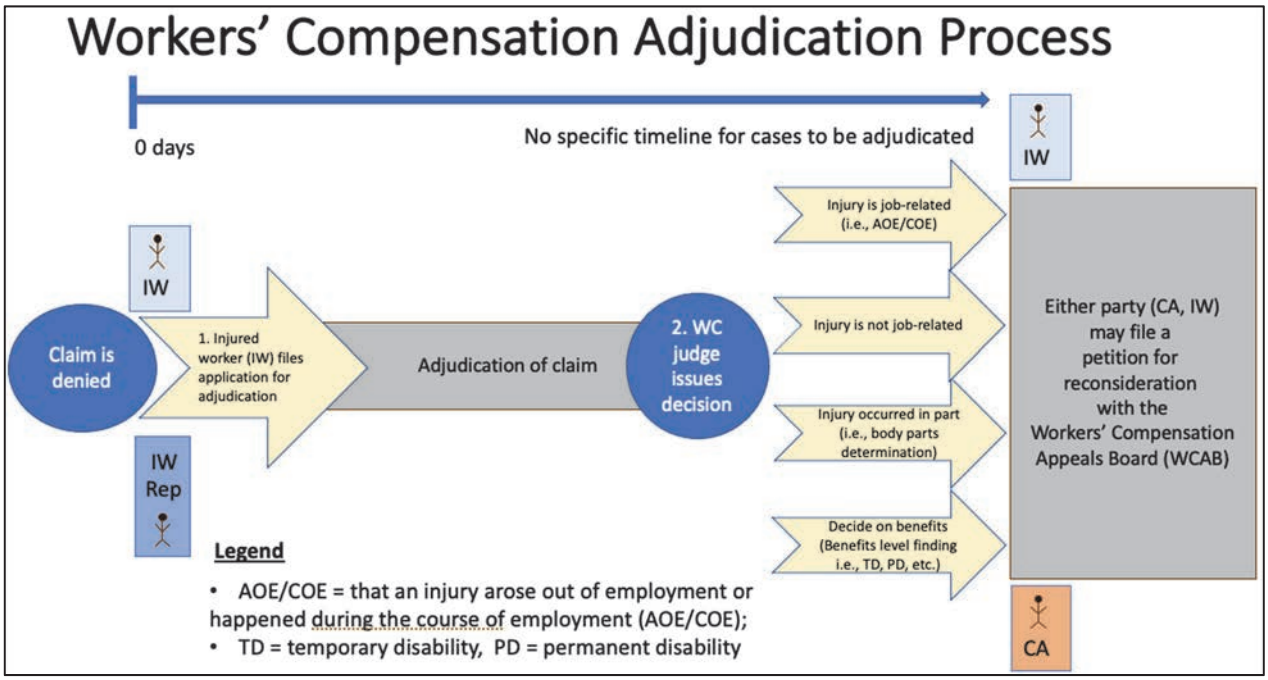


SOURCE: Based on California Department of Industrial Relations, 2016.

In many cases, and in claims of all types, documentation about the injury itself, the diagnosis based on the injury, or the job-relatedness (i.e., AOE/COE) of the injury is lacking. In these instances, the claims administrator typically requests a QME. However, either party (i.e., the injured worker or the claims administrator) can determine the need for a QME evaluation. To involve a QME, the injured worker must request a QME appointment using a list of approved QMEs. Once the injured worker reaches out, the QME schedules an evaluation date. After the QME evaluation is complete, the QME has 30 days to file an initial report to the claims administrator and to make a determination on the claim. If more information is needed, the QME can also file a supplemental report to the claims administrator.

If a claim is denied, the injured worker, along with their representative (if they have one), can appeal the determination; this starts the adjudication process. See Figure 4.3 for an overview of the workers' compensation adjudication process.

Figure 4.3. Workers' Compensation Adjudication Process



SOURCE: Sourced by interviews and *Workers' Compensation in California: A Guidebook for Injured Workers* (California Department of Industrial Relations, 2016).

Injured workers and their representatives have up to 25 days to appeal their claims through an application for adjudication. A workers' compensation judge then issues a decision on the adjudication based on the documentation provided by the injured worker and representative. The workers' compensation judge can make one of three determinations: the judge can rule that the injury is job-related (i.e., AOE/COE), that the injury is not job-related, or that the injury occurred in a certain body part. Finally, the judge makes determinations on the benefits (i.e., the level of

benefits an injured worker is entitled to for the claim, such as temporary or permanent disability benefits). If either the injured worker or the claims administrator has an issue with the determination, they may file a petition for reconsideration with the WCAB. This can be accepted or denied for reconsideration and adjudication.

Experiences of Claim Delay, Denial, and Acceptance

As mentioned, a workers' compensation claim can be delayed after a 14-day investigation period from the date that an injured worker files a claim. The claims administrator has up to 90 days after a claim is filed to either deny or accept it. We interviewed first responders and applicants' attorneys as well as department stakeholders about their experiences with mental health claims that are delayed, denied, and approved.

Perspectives of First Responders and Applicants' Attorneys

First responders and applicants' attorneys had experiences with claims that were delayed, denied, and approved. In interviews, injured workers discussed their experiences with their own claims, while applicants' attorneys discussed their experiences with the range of claims they have represented. Below is a synthesis of those experiences.

Claim Delays

Applicants' attorneys reported that the main reason mental health claims were put on delay was that the diagnoses presented were not diagnoses accepted by workers' compensation. These types of claims required further clarification and investigation by claims administrators as to whether they included a substantiating diagnosis. Other reasons claims were put on delay, according to applicants' attorneys and/or injured workers, included the following: the need for more time to gather further medical documentation, questions from claims administrator related to proving the job-relatedness of the claim, difficulty finding a mental health provider who could provide a diagnosis or treatment, and the expiration of the statutory limit for filing the claim. These issues were similar among firefighters, police officers, and the applicants' attorneys that represented them. An applicants' attorney explained the following:

> It is hard to come by a diagnosis of PTSD. It is hard to get a doctor to say "PTSD" without psych testing and a lot of records. There is such thing as fatigue because of pressure to put things behind you. Over time, it is hard to explain those things with enough detail to get a PTSD diagnosis. *—Southern California nonurban applicants' attorney (AA-SR03)*

Since enactment of Senate Bill 863 in 2013, the California Labor Code has required employers to pay for up to $10,000 of medical care while a claim is on delay, even if the claim has not yet been approved ("Labor Code 5402: Division 4. Workers' Compensation and Insurance," 2013). However, the applicants' attorneys and workers we spoke to had not been able to access or use these funds, and most did not know about the opportunity. When discussing

their experiences with claims on delay or under investigation, workers, applicants' attorneys, and mental health providers alike noted significant impacts on the injured workers. (Impacts from claim denials were also noted, but this topic is discussed in the next section.) Half of the applicants' attorneys reported that claim delays put additional stress on injured workers, including financial burdens, worries about finances and work status, stigma related to having a mental health claim, family stress, and family issues that could lead to divorce. As one applicants' attorney commented,

> The workers' compensation system is so destructive to mental health and how people feel. It makes you feel like a criminal. We talk about stigma to the core. It is also the ringer they make you go through to gain care and help. *—Northern California urban applicants' attorney (AA-NU02)*

Applicants' attorneys (and mental health professionals) mentioned that the lengthy process and arduous steps often involved in pursuing a mental health claim only added emotional cost and aggravated symptoms. Claim delays tended to both put off and prolong treatment, as they required mental health providers to also help first responders deal with the real-time stresses and stigma associated with their mental health claims process. In fact, providers often needed to attend to such real-time stress before they could address the trauma, stress, and incident related to the mental health condition itself. (See Chapter 6 for a more in-depth discussion of the issues related to first responders' access to mental health treatment and the timing involved.)

Injured worker reports were similar to those of applicants' attorneys: they noted that claim delays caused them additional stress, worry, and family issues, along with delayed or prolonged treatment. One police officer shared the following:

> I can't tell you how many arguments my wife and I had about what will happen based on the denials. I thought I had to sell the house and move in with my parents. Had that been the case with the presumption, I could be able to focus on treatment and not on losing my house. That would be huge. *—Northern California peace officer (PN-FR02)*

Almost half of the injured workers interviewed mentioned that they had personally incurred additional financial costs when their claims were on delay. As one police officer revealed,

> I was totally drowning. It was completely made worse by the lengthy [claims] process. My wife is stay-at-home, and she was thinking that she would have to wait table to make ends meet. We had to drop out of our city insurance plan—a collective-type plan that had a super low cost to me. We lost tons of coverage. We knew it was a bad decision, but we had to roll the dice, because we needed the money so bad. We refinanced our house to lower the monthly payment. *—Northern California peace officer (PN-FR01)*

Claim Denials

We asked applicants' attorney and injured workers the main reasons mental health claims were denied. Applicants' attorneys reported a range of reasons for denials of mental health claims either at the end of or after the investigation period. Half of them stated that claims were

typically denied either because a QME denied or disagreed with the mental health diagnosis given on the claim or because the QME or claims administrator denied its job-relatedness. This viewpoint was more common among applicants' attorneys who represented predominantly peace officers; geographical characteristics of applicants' attorneys seemed to make no difference. One applicants' attorney explained,

> The problem is that it is always subjective to say that there is a mental health issue. It is subjective and based on a mental health doctor. You can have a bad doctor who says they do not believe the mental health symptoms or claim. Any real comp claim is rarely not ultimately accepted. *—Northern California urban applicants' attorney (AA-NU02*)

Applicants' attorneys also noted that a prior mental health diagnosis could lead to a claim being denied. The rationale was that some first responders had other non-job-related issues in their past that had contributed to their stress (i.e., performance or disciplinary issues at work, childhood trauma, military service). In these cases, many applicants' attorneys indicated that they would advise the first responders not to file a claim and to seek care via an EAP instead. Further, some applicants' attorneys counseled first responders to gain mental health treatment before filing a mental health claim, to substantiate the mental health issues they were experiencing, and to gain documentation stating that the issues were caused by trauma exposure at work. Applicants' attorneys mentioned a few other reasons for denials of mental health claims as well: a lack of adequate medical documentation on the claim (i.e., records from a mental health provider concerning the diagnosis, treatment, or reason for a mental health issue were missing); a culture (within the department and within the associated insurance company or city) in which mental health claims were not accepted upon first review; and the perception that all mental health claims were to be denied initially, regardless. An applicants' attorney claimed the following:

> If you want to look at a cop that has had prior mental health treatment, the mental health that was previously provided is from a prior job, usually from the military. . . . The argument of using prior mental health treatment to deny a Workers' Compensation mental health claim is ridiculous. You, as a firefighter or peace officer, passed all the psychiatric testing for the job, and you are now here and need more treatment. . . . They may be denied for mental health treatment initially. *—Northern California urban applicants' attorney (AA-NU01*)

Most injured workers' experiences aligned with what we heard from applicants' attorneys: both parties indicated that mental health claims were almost always denied as a matter of policy in their departments, and this was true for both fire and police departments. One police officer stated,

> These claims adjustors run a business, and part of their job and strategy is to deny things. People believe you are going to get denied. What happens if you get into a fight with the city and WC? That becomes a trauma. *—Southern California peace officer (PS-FR01)*

An applicants' attorney further explained,

> Once [a first responder] has the courage to file a claim and then the employers mostly deny those claims, it is hard. Even harder when claims are a cumulative claim instead of an acute claim. Insurance companies and employers hate cumulative claims. Those cumulative claims get denied at the onset. After a denial, the firefighter or police officer gets discouraged, but the thing is, they still need the help. —*Southern California urban applicants' attorney (AA-SU02)*

All 13 injured workers that we spoke to had a PTSD diagnosis; however, only 11 filed a mental health claim. Two peace officers that sought treatment did not file a workers' compensation claim. Table 4.1 lists the types of claims filed by the firefighters and peace officers interviewed.

Table 4.1. Type of Mental Health Claims Filed by Interviewed First Responders

Type of Mental Health Claim Filed	Firefighter	Peace Officer	Total
Acute Stress		1	1
Cumulative Stress		2	2
PTSD	2		2
PTSD Combined with a Physical Claim	1		1
PTSD and Cumulative Stress	2	2	4
PTSD and Cumulative Stress Combined with a Physical Claim	1		1
Total	6	5 [a]	11

[a] Two interviewed peace officers did not file a claim; both had a PTSD diagnosis.

During the interview period, of the 11 mental health claims that were filed, one was under investigation during the initial claim-administration phase (i.e., the 90-day window) and did not have an outcome. Of the ten claims with outcomes, two had not had any type of denial, and eight had either partial or full initial denials. Half of the firefighters had denials (of any type), and all peace officers ($N = 5$) had denials. Seven of the eight first responders whose mental health claims were denied hired applicants' attorneys.

A few injured workers also mentioned that their mental health diagnoses were not accepted by workers' compensation, that they did not have enough medical documentation on their claims for the diagnoses, and that the QMEs either denied the diagnoses or their mental health providers denied the job-relatedness of their claims (despite agreeing with their diagnoses). These issues were similar to both firefighters and police officers.

Claims Acceptance

From the interviews and those eight first responders with denied claims, all were reversed and ultimately accepted; two were still undergoing final settlement decisions. From the filing of the claim to the acceptance of the mental health component was a time window ranging from two to 15 months and was roughly six months (median). This compared with the three- to four-month timeframe of filing to acceptance for the two mental health claims that were not denied. The first responders interviewed had complicated, drawn-out workers' compensation mental health claim

experiences, many of which included delayed treatment and the need to have to cover their treatment out-of-pocket (i.e., via self-pay).

Almost half of the injured workers whose claims were approved stated that their claim was ultimately approved because they received/confirmed a PTSD diagnosis from a QME. A police officer indicated the following:

> It was a few months to get a QME. The QME came back and said I had mild to severe PTSD. But they didn't approve my claim; eventually they approved it. *—Northern California peace officer (PN-FR01)*

Claims that were not approved and moved forward into appeal and/or into litigation with an applicants' attorney were due to a several reasons: most often this occurred when a QME did not agree with the diagnosis of the mental health provider, the claim did not have enough medical documentation, or a prior mental health diagnosis was documented that substantiated that the current claim was not job-related (e.g., PTSD diagnosis from the veterans administration from military career prior to being a first responder).

Similarly, nearly all applicants' attorneys stated that either obtaining a diagnosis of PTSD and/or the establishing that an injury was job-related were the main reasons a claim was reversed and ultimately approved. Two applicants' attorneys offer explanation:

> It always helps if there is corroboration to an event. If you can prove a shooting occurred that caused your trauma, it is hard for a doctor to deny that. It is usually a single officer and firefighter for each event, not multiple police officers or firefighters. *—Southern California urban applicants' attorney (AA-SU03)*

> Either with a prior PTSD diagnosis and prior treatment, both cases wait on the PTSD diagnosis from the AME [agreed medical examiner] and QME. It is denied until then . . . AME and QME need to do psychological testing. They can also not believe the officer or look at the medical records and make a determination. *—Northern California nonurban applicants' attorney (AA-NR03)*

In addition, applicants' attorneys stated that in their broader experiences, claims that ultimately were denied were tied to issues raised with job performance rather than the substantiation of the injury being work-related. They also talk about the difficulty proving causation for a cumulative-stress claim particularly if there was not a defined incident; many cumulative-stress claims ultimately are denied and not reversed. Furthermore, applicants' attorneys indicated that if a prior mental health diagnosis or prior mental health treatment (not for the current injury) were documented, that this was often used to prove that the current mental health diagnosis was not job-related. Applicants' attorneys did raise issues of a lack of medical mental health documentation from mental health providers as a problem that allowed claims to be denied. They also indicated that many times a claim would ultimately be denied if the QME denied the diagnosis given by a mental health provider or they stated that the diagnosis given was for a non-job-relatedness issue. An applicants' attorney described such an issue:

> The case I am thinking of, we took to trial. The defense was that he was not able to handle the work. There was a bullying incident that broke the camel's back. He was a veteran . . . [*details*

removed for anonymity]. It was fatigue from the job of [*details removed for anonymity*]. WC denied the claim. They said it was a job-performance issue. . . . On both sides, the doctors said it was related to work. *—Northern California nonurban applicants' attorney (AA-NR03)*

Two conditions yield the final approval or acceptance of a mental health claim: (1) a confirmed mental health diagnosis through a workers' compensation mental health provider or a QME and (2) also their determination that the mental health claim is job-related.

Perspectives of Claims Administrators, Mental Health Providers, and Fire/Police Chiefs

Claims administrators have experiences adjudicating claims, putting claims on delay, and determining denial or acceptance, while mental health providers have experience treating patients with claims at each of those stages. In interviews, we asked claims administrators about the number and type of mental health claims that they had processed in 2019 and 2020 for first responders from the fire or peace officer department for which they worked. See Table 4.2 for those numbers.

Table 4.2. Number of Mental Health Claims Filed, by Department Type

	Number of Mental Health Claims[a]	
Type of Department	**2019**	**2020**
Peace Officer Departments		
Nor CA: High Denials (NonU)	5 (no PTSD)	11 (no PTSD)
Nor CA: Low Denials (Urban)	5 (no PTSD)	5 (1 PTSD)
So CA: High Denials (Urban)	6 (1 PTSD)	12 (5 PTSD)
So CA: Low Denials (NonU)	2 (1 PTSD)	None
Fire Departments		
Nor CA: High Denials (NonU)	6 (No PTSD)	6 (No PTSD)
Nor CA: Low Denials (Urban)	3 (No PTSD)	4 (1 PTSD)
So CA: High Denials (NonU)	2 (No PTSD)	4 (1 PTSD)
So CA: Low Denials (Urban)	3 (No PTSD)	14 (1 PTSD), but one acute incident had 12 claims

NOTE: Nor CA = Northern California; So CA = Southern California; NonU = Nonurban; High/Low Denials = high (or low) volume of mental health claim denials

[a] We asked the claims administrators for the eight departments about the specific types and numbers of mental health claims on record for 2019 and 2020.

We also asked claims administrators health professionals and chiefs of departments whether their experience was for mental health claims to be filed alone or combined with physical. Primarily we heard from all three groups that mental health claims were combined with physical. We heard this also for both firefighters and peace officers; however, claims administrators indicated that a lot more workers' compensation claims for firefighters are coupled and have both a physical and mental health component. Claims administrators did add the caveat that if an applicants' attorney was involved, then the claim tended to always include both a physical and mental health component, whereas that PTSD claims tended to be a mental-health-only claim. A claims administrator stated,

> Usually, a claim is combined mental health with physical. If they have an attorney, the WC claim is definitely both [mental and physical]. For PTSD WC claims, yes, most of them are only mental health, and they mention an incident from past years. It all adds up over time, and they file a WC claim. *—Northern California claims administrator for firefighters (FN-CA03)*

We also discussed claim administrators experiences adjudicating claims and the main reasons why they are adjudicated the way they are. We also discussed with mental health providers their experiences treating patients with a range of mental health claims. Below is a synthesis of those experiences.

Claims Delays

Nearly all claims administrators stated that the reason most claims are put on delay is that the claims administrator needs more medical documentation to determine whether to accept or deny a claim. A claims administrator explained,

> Reports from medical doctors or mental health providers do not provide enough information for us to accept the claim. They may say they need more treatment before causation. They say we need maximum medical improvement before we know what is going on. They, the treating physicians, delay the process so long that we have to make a decision. We usually delay the claim. If the medical report does not confirm that it is work-related, then we have to do a QME and then deny, unless the QME tells us it is work-related. *—Northern California claims administrator for peace officers (PN-CA02)*

A few claims administrators also noted that they have difficulty determining whether an injury is job-related based on the information in the claim, and that the diagnosis on the mental health claim is not one accepted by workers' compensation. This was similar across departments with high and low denial rates.

Claims administrators in half of departments interviewed discussed their city's support for workers' compensation claims for mental health issues. These departments supported workers to file claims, through greater trust in first responders to report true claims of mental health issues. The majority of those departments were police departments. One claims administrator asserted,

> If the claim is for police officers and firefighters, we do not really need to prove anything about it being job-related. That it is work-related is now presumptive in 2020. We have to do investigations for other things, but not if it is job-related. Even before 2020, if we have medical evidence, it is really rare in our city that a WC claim for a FF or PO is denied for psych issues. Our city is good at supporting first responders for mental health. *—Northern California claims administrator for firefighters (FN-CA03)*

Claim Denials

When discussing reasons why a claim is denied at the end of the 90-day investigation period, almost all claims administrators mentioned that they needed more medical documentation. Since a claim must be accepted or denied at the end of the 90-day investigation period if they did not have the needed documentation, they denied the claim. As one claims administrator stated,

> Denials are because there is no medical evidence that the stress on the mental health of the police officer was related to employment. That would be the only reason a police officer stress claim would be denied. So that means that the denial is specific to no medical evidence and that there is no evidence of stress, either to substantiate a diagnosis or its relation to their employment. *—Southern California claims administrator for peace officers (PN-CA01)*

A few claims administrators also stated that claims are ultimately denied because the underlying injury is determined to not be job-related, that the diagnosis is not a diagnosis that is accepted by workers' compensation, that most claims are denied initially, and that the culture of the department is to deny most mental health claims.

In contrast, half of the mental health providers interviewed stated that most claims are denied because departments tend to initially deny all mental health claims. Mental health providers also stated a major reason for denying a claim was that the injured worker had a prior mental health diagnosis or treatment. As one mental health provider expressed,

> Denials and the process vary tremendously by WC insurance agency and by the fire and police department jurisdiction. One agency denies everyone. For example, in one department, one of their deputies was assaulted in jail and they barely approved the claim. The QME comes back and says it is definitely work-related PTSD, but the insurance company and the utilization-review department deny it. The claims adjustor or utilization review always find reasons. Within insurance companies, it varies by claims adjuster. Some claims administrators deny the claims, some deny the billing, some authorize treatment and say afterwards that they cannot pay for treatment. *—Northern California mental health provider who treats peace officers (PN-MH02)*

Some mental health providers indicated that this directive came from the department chiefs. A mental health provider explained,

> If their mental health got worse enough that the police officer could no longer work, then they would file a WC mental health claim. Administrative policy was to deny the WC claims; I heard this from the chief/deputy chief level. The policy was to deny the mental health claim for up to three years and have the officer fight the mental claim and have them pay for it themselves. WC would reimburse the officer for the mental health treatment at the back end. The police officer only came for help when absolutely necessary, and then we had to work with WC to get the sessions paid for. Also, I had a shark of a collections person in the office. She made certain I got paid for the sessions. It was rare that I lost anything for the sessions, but it took time. *—Southern California mental health provider who treats peace officers (PS-MH01)*

Other reasons for denials discussed by mental health providers were as follows: a department had a culture of denying most mental health claims, the underlying injury was determined not to be job-related, and there was not enough medical documentation. A mental health provider said the following:

> We are not paid to do paperwork for workers' compensation or to be adversarial to the department. We are here to support the employees. It works well when the department puts the money in their budgets for us to do this direct, mainly because of the messaging, and it allows us to get the officers the care they need faster since it is through the department. . . . We sidestep the question of proving or disproving if it is job-related. That way, we are not adversarial. *—Southern California mental health provider who treats peace officers (PS-MH03)*

Department chiefs reported that privacy concerns kept them from knowing whether their workers' claims were being denied. In most cases, chiefs got some information about denied claims, but that information was de-identified or aggregated so that the claiming individuals could not be identified. A chief acknowledged the following:

> Some cases were denied. Some the third-party investigator gathered information and were denied. Some of these are for performance-related issues. Potential to be dismissed, failing to meet standards, or performance evaluation—those are scrutinized the most. Scrutinized the most when there is a nexus with performance and the lack thereof. —*Southern California fire chief (FS-DC02)*

Final Outcomes of Mental Health Claims

Claims administrators agreed that claims were approved when they had enough documentation to show that the claimed injury occurred on the job (establishing job-relatedness) and that the diagnosis provided was appropriate. If mental health providers do not supply sufficient documentation for a diagnosis, claims administrators usually request that the injured worker schedule a QME to establish whether the appropriate diagnosis is present on the claim. Many initial denials were ultimately reversed after further investigation or input from QMEs.

Claims administrators also agreed that claims with a mental health component (filed alone or with a physical claim) were filed during the term of employment (not post-termination); this included claims that were filed by workers nearing retirement.

Frequency, Characteristics, and Outcomes of Workers' Compensation Claims Filed by First Responders

The interview findings presented so far offer rich insights into the experiences that first responders have with mental health conditions and the institutional processes that shape those experiences. Our qualitative data is not intended to represent the full population of first responders who filed workers' compensation claims, however, and it cannot be used to draw comparisons with the volumes and outcomes of claims filed by workers in other occupations (who were outside the scope of qualitative work that could be undertaken in this study).

To establish basic facts about PTSD claims in the workers' compensation system, we used claims data from the WCIS, facilitating comparisons between claims with and without PTSD and between PTSD claims filed by workers in different occupations. In the remainder of this chapter, we present estimates of the frequency with which workers in different occupations file workers' compensation claims involving PTSD; the types of injuries initially reported on claims involving PTSD; and important claim outcomes, such as denial rates and receipt of indemnity benefits. Methods used in this analysis were discussed in Chapter 2, and estimates of the costs associated with claims involving PTSD are presented in Chapter 7.

Demographics and Other Characteristics of Injured Workers in the California Workers' Compensation System

Table 4.3 presents summary statistics on demographics, by occupation, for workers who file workers' compensation claims. The demographics of workers who file claims broadly resemble those reported in Chapter 3 for the overall workforce in each occupation. Peace officers and firefighters who file workers' compensation claims are heavily male, and comparison occupations are also more male than the overall population of California workers who file workers' compensation claims. For the overall workforce in each occupation, the average age of workers who file workers' compensation claims is very similar across occupations: even though first responders are younger than other workers, on average, those who file workers' compensation claims tend to be older and thus have an age distribution that is more comparable with other occupations. Geographic differences across occupations are also more muted among workers who file workers' compensation claims than in the overall workforce.

Table 4.3 reports the sample size for our analysis sample, which is limited to 2008–2019 injury-year claims that (1) had complete records, (2) could be assigned an occupation code with 50 percent or higher certainty, (3) were reported by claims administrators that reliably report SROI data, and (4) could be linked to one or more medical bills (see Chapter 2 and Appendix C for details). For comparison, Table 4.3 also reports the sample size of claims in each occupation that have complete data on the FROI and could be assigned occupation codes, thus representing the targets for our sampling weights (see Appendix C). Covering more than 12 injury years, our analysis sample contains 32,592 usable claims from firefighters and 82,966 usable claims from peace officers. In the FROI, we observed 82,651 and 203,473 claims, respectively, from these occupational groups, meaning that only about 40 percent of the claims in these occupations could be used in our analysis sample. Sampling weights were used in all calculations to ensure that estimates were valid for the population of all FROIs submitted to WCIS for which occupation could be determined and for which basic information used in weighting (age, gender, pre-injury weekly wage, employee ZIP code, and claim administrator type) was not missing.

Frequency of Claims with PTSD and Other Mental Health Conditions

Table 4.4 reports the case mix of workers' compensation claims filed by first responders and comparison occupations, focusing on PTSD, other mental health conditions, and other conditions covered by presumptions for public safety workers. For first responders overall, 0.7 percent of claims involved PTSD, a slightly higher rate than the 0.6 percent observed in comparison occupations. This statistic masks some important differences between firefighters and peace officers, however. The proportion of workers' compensation claims involving PTSD is 0.7 percent, while the proportion observed for firefighters is 0.9 percent. The rate observed for peace officers is very close to the rate observed for their comparison group and is substantially lower than the rates observed for security guards (1.1 percent of workers' compensation claims

Table 4.3. Volume and Characteristics of Workers' Compensation Claims Filed, by Occupation, 2008–2019 WCIS

Occupation Group	First Responders and Comparison Groups		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				All Workers
Occupation	First Responders	First Responder Comparators	Firefighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
Demographics										
% Female	13.8%	17.6%	5.4%	8.1%	36.0%	18.5%	32.8%	28.3%	26.7%	44.0%
Mean Age	40.4	41.1	41.7	41.9	33.8	39.5	42.1	41.4	40.3	41.9
% Aged 18–39	47.5%	46.1%	42.9%	44.7%	73.8%	51.1%	43.3%	49.7%	48.8%	45.5%
% Aged 40–49	32.5%	29.2%	34.9%	25.6%	15.8%	31.9%	27.6%	18.9%	31.8%	24.1%
% Aged 50–64	19.7%	23.5%	24.8%	27.9%	10.1%	16.7%	27.3%	25.6%	18.9%	27.7%
% Aged 65+	0.4%	1.1%	0.4%	1.8%	0.4%	0.3%	1.9%	5.9%	0.6%	2.7%
Geography										
Live in Northern California (%)	30.5%	33.4%	38.0%	39.2%	38.5%	25.5%	35.2%	29.3%	36.6%	33.2%
Live in Urban Area (%)	93.1%	91.8%	91.5%	91.3%	93.5%	94.3%	89.8%	95.4%	81.9%	93.1%
N claims in analysis sample	115,347	285,111	32,592	168,834	10,384	82,966	152,965	30,819	37,910	2,930,923
N claims with occupation information available	280,884	816,262	82,651	312,113	20,135	203,473	293,497	58,369	60,981	5,920,179

NOTES: Authors' calculations, 2008–2019 WCIS. Sample is limited to observations for which there are valid occupation codes; workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of total FROI submissions and has complete medical bill data.

Table 4.4. Workers' Compensation Claims Involving PTSD and Other Mental Health Conditions, by Occupation

Occupation Group	First Responders and Comparison Groups		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				All Workers
Occupation	First Responders	First Responder Comparators	Firefighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
Mental Health Conditions										
PTSD	0.7%	0.6%***	0.9%	0.4%***	0.5%*	0.7%	0.7%***,[a]	1.1%***	1.5%***	0.4%
Anxiety/Trauma Disorders	1.6%	2.4%***	1.5%	1.6%***	1.2%	1.7%	3.2%***	3.5%***	4.6%***	2.4%
Nonpsychotic Mental Disorders	2.6%	4.5%***	2.4%	3.5%***	2.6%**	2.7%	5.5%***	6.4%***	7.1%***	4.6%
Presumption Conditions										
Cancer	1.7%	0.3%	2.3%	0.2%	0.1%	1.4%	0.3%	0.2%	0.4%	0.3%
Exposure to a Biochemical Substance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Heart Trouble	4.2%	1.6%	5.2%	1.2%	0.8%	3.8%	2.1%	1.6%	5.0%	1.1%
Hernia	1.8%	1.3%	2.5%	1.5%	0.8%	1.6%	1.1%	0.6%	0.9%	1.1%
Lower Back Impairments	16.5%	14.8%	16.0%	14.5%	15.4%	16.8%	15.3%	14.7%	14.4%	15.6%
MRSA	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Pneumonia	0.7%	0.2%	0.7%	0.2%	0.1%	0.5%	0.2%	0.2%	0.6%	0.1%
Other Infectious Diseases	0.6%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.0%	0.2%	0.0%
Total (One or More Non-PTSD Presumption Conditions)	22.9%	17.3%***	24.4%	16.8%***	16.9%***	22.3%	18.1%***	16.6%***	19.9%*	17.4%
N Observations	115,347	285,111	32,592	168,834	10,384	82,966	152,965	30,819	37,910	2,930,923

NOTES: Authors' calculations, 2008–2019 WCIS. Other Infectious Diseases = Lyme disease, meningitis, or tuberculosis. MRSA = Methicillin-resistant Staphylococcus aureus. Sample is limited to observations for which there are valid occupation codes; workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of the total FROI submissions and has complete medical bill data. Statistical significance was tested for differences between each non-first-responder occupation group and the corresponding first-responder occupation group (first responders, firefighters, or peace officers) for those claims with mental health conditions and for Total (One or More Non-PTSD Presumption Conditions). Significance of differences in specific presumption conditions was not tested.

[a] Proportion of claims involving PTSD was 0.70 percent for peace officers and 0.73 percent for peace officer comparators.

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

involving PTSD) or correctional officers (1.5 percent of workers' compensation claims involving PTSD). Meanwhile, the rate observed for firefighters (0.9 percent of workers' compensation claims involving PTSD) is over twice as high as the rate observed for their comparison occupations (0.4 percent of workers' compensation claims involving PTSD) and is also much higher than the rate observed among ambulance drivers and EMTs. Both firefighters and peace officers are more likely to have workers' compensation claims that involve PTSD than workers in California overall (0.4 percent).

When we broaden our definition of mental health conditions to include other anxiety or trauma disorders, we find that firefighters now have a proportion of claims for mental health conditions (1.5 percent) that is similar to that of comparison occupations (1.6 percent) but is still higher than that of ambulance drivers and EMTs. As with PTSD, peace officers have a lower proportion of claims involving anxiety and trauma disorders than those in comparison occupations, security guards, or correctional officers, and rates for both groups of first responders are lower than the average for all workers' compensation claims (2.4 percent). Rates of nonpsychotic mental health conditions (our broadest definition of mental health conditions) exhibit similar patterns.

The lower panel of Table 4.4 shows rates of claims filed for conditions covered by other presumptions in the Labor Code. Both firefighters and peace officers are more likely to file claims for conditions covered by presumptions than are workers in similar occupations. For firefighters (24 percent of claims involving presumption conditions, compared with 17 percent for comparison occupations and ambulance drivers/EMTs), the higher rate is driven largely by claims involving cancer, heart disease, and, to a lesser extent, low back impairments and hernias. For peace officers (22 percent of claims involving presumption conditions, compared with 18 percent for their comparison group, 17 percent for security guards, and 20 percent for correctional officers), cancer, heart disease, hernia, and low back impairments account for the higher frequency of presumption conditions. Other than pneumonia, presumption conditions related to infectious disease were infrequently reported, and we identified no claims associated with exposure to a biochemical substance.

Initially Reported Nature of Injury on Claims Involving PTSD

As discussed in Chapter 2, we used diagnoses reported on medical bills to ascertain whether PTSD or other medical conditions were involved in workers' compensation claims. We did this because the injury or condition that initially triggers the filing of a workers' compensation claim is not always the condition that is most disabling or costly, and because important work-related medical conditions may be discovered or diagnosed only after the claim has been filed and the worker has received some amount of post-injury medical care.

Assemblymember Daly and CHSWC therefore asked about the share of PTSD claims that enter the workers' compensation system with physical injuries, psychiatric injuries, or both. Table 4.5 describes the nature of injuries reported on initial workers' compensation claims. These codes,

Table 4.5. Initially Reported Nature of Injury by Involvement of PTSD Diagnosis, by Occupation

Occupation Group	First Responders and Comparison Groups		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				All Workers
Occupation	First Responders	First Responder Comparators	Firefighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
PTSD										
Physical Only	44.8%	65.5%***	42.4%	79.9%***	53.6%*	46.3%	58.0%***	68.4%***	57.1%***	63.7%
Mental Only	35.8%	23.6%***	37.7%	12.9%***	36.1%	34.8%	29.0%***	24.0%***	26.3%***	26.7%
Mental and Physical	3.2%	2.1%	5.0%	2.0%	1.2%	2.3%	2.5%	4.9%**	0.8%**	3.3%
Cumulative, Not Otherwise Classified	16.1%	8.9%***	15.0%	5.2%***	9.1%*	16.7%	10.6%***	2.7%***	15.8%	6.4%
N (Unweighted)	904	1,878	258	740	64	648	1,361	403	654	15,290
Other Claims (Without PTSD)										
Physical Only	92.6%	93.1%	95.2%	95.8%	97.4%	91.4%	90.7%	94.2%	82.1%	93.6%
Mental Only	0.7%	1.3%	0.4%	0.6%	0.4%	0.8%	2.0%	1.6%	2.6%	1.3%
Mental and Physical	0.2%	0.3%	0.1%	0.2%	0.1%	0.2%	0.3%	0.6%	0.1%	0.4%
Cumulative, Not Otherwise Classified	6.6%	5.3%	4.2%	3.4%	2.1%	7.6%	7.0%	3.6%	15.2%	4.7%
N (Unweighted)	114,443	283,233	32,334	168,094	10,320	82,318	151,604	30,416	37,256	2,915,633
Total										
Physical Only	92.2%	92.9%	94.8%	95.7%	97.1%	91.1%	90.5%	93.9%	81.7%	93.4%
Mental Only	1.0%	1.4%	0.8%	0.6%	0.6%	1.0%	2.2%	1.8%	2.9%	1.4%
Mental and Physical	0.2%	0.3%	0.2%	0.3%	0.1%	0.2%	0.3%	0.6%	0.1%	0.4%
Cumulative, Not Otherwise Classified	6.7%	5.4%	4.3%	3.4%	2.1%	7.7%	7.0%	3.6%	15.2%	4.7%
N (Unweighted)	115,347	285,111	32,592	168,834	10,384	82,966	152,965	30,819	37,910	2,930,923

NOTES: Authors' calculations, 2008–2019 WCIS. Sample is limited to observations for which there are valid occupation codes; workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of the total FROI submissions and has complete medical bill data. Statistical significance was tested for differences between each non-first-responder occupation group and the corresponding first-responder occupation group (first responders, firefighters, or peace officers) for those claims with PTSD diagnoses only.

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

indicated by Workers Compensation Insurance Organizations' nature-of-injury codes on the FROI (see Chapter 2 for details), stratify claims involving PTSD claims (first panel) versus all other claims (second panel). We grouped nature-of-injury codes into four categories: physical only, mental only, mental and physical combined, and cumulative—not otherwise classified (cumulative NOC). Cumulative NOC claims, which are important throughout the workers' compensation system, might include an unknown combination of physical and psychiatric injuries. For more details on how these categories were defined, see Appendix C.

Throughout the workers' compensation system, 64 percent of claims involving PTSD are filed as physical injuries only, 27 percent are filed as mental health claims, 3 percent are filed as mixed physical/mental claims, and 6 percent are filed as cumulative NOCs.

Firefighters are more likely than comparison workers or ambulance drivers/EMTs to file PTSD-related claims as mental health claims (38 percent), as mental plus physical claims (5 percent), and as cumulative NOC claims (15 percent). They are correspondingly less likely to file claims involving mental health conditions as physical-only claims (42 percent). Peace officers are also less likely than most other workers to file claims involving PTSD as physical-only claims (46 percent) or as mental and physical (2 percent), though they file a higher proportion of mental-only (35 percent) and cumulative NOC (17 percent) claims than the general workforce.

Employment Status at Injury for Claims Involving PTSD

Table 4.6 describes the distribution of employment statuses at the time claims were reported, as indicated on the FROI. These estimates address the research question regarding the proportion of claims filed on a post-separation or post-termination basis, though note that the WCIS does not distinguish post-termination claims (a legal term of art for claims that are filed—sometimes in bad faith—following an involuntary job separation) from claims filed after job separation for other reasons (including retirement). Overall, the vast majority of claims involving anxiety/trauma disorders (98.6 percent of all workers) were filed during the term of employment, while only 1.4 percent were filed while workers were retired or otherwise not employed. This is slightly lower than the proportion of claims not involving anxiety/trauma disorders (99.1 percent during the term of employment). The higher frequency of post-employment claims observed among claims involving PTSD and other mental health conditions may be explained by the potential for long delays between traumatic exposure, symptom onset, and the decision to seek help.

While post-employment claims make up a small proportion of mental health claims, it does appear that first responders are more likely to file these claims than those in similar occupations; 3.2 percent of claims filed by firefighters that involve anxiety/trauma disorders are filed post-separation, as are 2.1 percent of claims filed by peace officers. These rates are higher than those observed in similar occupations.

Table 4.6. Employment Status at the Time a Claim Was Reported, by Involvement of Anxiety/Trauma Disorders, by Occupation

Occupation Group	First Responders and Comparison Groups		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				All Workers
Occupation	First Responders	First Responder Comparators	Firefighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
PTSD Claims										
% Employed When Injury Reported	96.7%	98.6%***	96.2%	99.1%***	100%*	96.9%	98.4%**	98.2%**	98.0%*	98.6%
% Not Employed When Injury Reported	3.3%	1.4%	3.8%	0.9%	0.0%	3.1%	1.6%	1.8%	2.0%	1.4%
N (Unweighted)	904	1,878	258	740	64	648	1,361	403	654	15,290
Anxiety/Trauma Disorder Claims										
% Employed When Injury Reported	97.6%	98.9%***	96.8%	98.8%***	99.4%**	97.9%	99.0%***	98.4%	98.7%**	98.6%
% Not Employed When Injury Reported	2.4%	1.1%	3.2%	1.2%	0.6%	2.1%	1.0%	1.6%	1.3%	1.4%
N (Unweighted)	2,056	7,393	494	3,020	145	1,565	5,171	1203	1,866	75,244
Non-PTSD Claims										
% Employed When Injury Reported	98.3%	99.2%***	97.6%	99.2%***	99.3%***	98.6%	99.3%**	99.3%**	98.7%**	99.1%
% Not Employed When Injury Reported	1.7%	0.8%	2.4%	0.8%	0.7%	1.4%	0.7%	0.7%	1.3%	0.9%
N (Unweighted)	114,443	283,233	32,334	168,094	10,320	82,318	151,604	30,416	37,256	2,915,633
Total *N* (Unweighted)	115,347	285,111	32,592	168,834	10,384	82,966	152,965	30,819	37,910	2,930,923

NOTES: Authors' calculations, 2008–2019 WCIS. Sample is limited to observations for which there are valid occupation codes; workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of the total FROI submissions and has complete medical bill data. Statistical significance was tested for differences between each non-first-responder occupation group and the corresponding first-responder group.

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

Benefit Receipt and Claim Denials for Claims Involving PTSD

Table 4.7 reports the proportion of claims receiving indemnity benefits by involvement of PTSD, anxiety/trauma disorders, or other presumption conditions. (Note that all PTSD cases are included in anxiety/trauma disorders, and the categories are non-exclusive.) Claims involving mental health conditions were much more likely than other claims to result in indemnity benefits: 48 percent of firefighters' PTSD claims and 54 percent of peace officers' PTSD claims resulted in paid indemnity benefits, compared with 32 and 36 percent for other presumption conditions. For claims involving no mental health or presumption conditions, 16 percent of firefighter claims and 15 percent of peace officer claims resulted in paid indemnity benefits.

Looking at specific types of indemnity benefits, about one-third of PTSD claims (32 percent for firefighters and 36 percent for peace officers) received temporary disability (TD) payments, compared with 16 and 17 percent for other presumption conditions and 9 and 8 percent for all other injuries. PTSD was also much more likely than other conditions to result in permanent disability (PD) benefits, with 26 percent of PTSD claims for firefighters and 37 percent for peace officers resulting in PD benefits. These rates were somewhat higher than observed for other presumption conditions (22 percent for firefighters and 26 percent for peace officers) and much higher than for all other injuries (8 percent for firefighters and 9 percent for peace officers). Settlements were also more common on claims involving PTSD, with settlements paid in 14 percent of firefighter PTSD claims and 24 percent of peace officer PTSD claims, compared with 6 and 12 percent for other presumption conditions and 3 and 4 percent for all other injuries.

To sum up, PTSD claims were much more likely than claims for average injuries and more likely than claims for other presumption conditions to result in payment of indemnity benefits. This gap appeared to be much larger for peace officers with PTSD, who were 11 percentage points more likely than firefighters with PTSD to receive PD benefits and 10 percentage points more likely to receive settled indemnity benefits. These estimates underscore that PTSD can lead to substantial work disability.

As Table 4.7 shows, there were also differences in benefit receipt between claims filed with TPAs and claims filed with self-administered employers. In general, TPAs appeared to be much more likely to pay indemnity benefits than self-administered employers, which may suggest that their cases were more severe; however, this fact is in tension with estimates indicating that claim denial rates were also higher at TPAs, as we discuss in Chapter 5.

Table 4.8 shows denial rates by occupation for claims involving PTSD (first panel) and claims involving what we define as intermediate mental health conditions (second panel), which include all anxiety or trauma-related disorders in addition to PTSD. It is important to remember that these estimates are for the period before SB 542 took effect, so claims involving PTSD faced a higher evidentiary bar than is now the case. First responder claims involving PTSD were substantially more likely to be denied than were claims filed by workers in some comparison occupations; 26 percent of first responder claims involving PTSD were denied, versus 17 percent

Table 4.7. Receipt of Benefits, by Involvement of PTSD, Anxiety/Trauma Disorders, or Other Presumption Conditions, by First Responder Occupation and Type of Claim Administrator

	First Responders			Firefighters			Peace Officers		
	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total
% Receiving Any Indemnity Benefits									
Narrow: PTSD	62.4%	33.5%	51.8%	62.3%	34.8%	47.8%	62.4%	32.3%	53.8%
Intermediate: Anxiety/Trauma Disorders (CCS/CCSR)	51.0%	25.4%	40.9%	55.7%	29.5%	42.8%	49.5%	23.3%	40.2%
All Other Presumption Conditions	51.7%	23.1%	34.4%	47.5%	23.8%	31.5%	53.2%	22.7%	35.8%
All Other Injuries	21.9%	10.3%	15.4%	21.4%	11.4%	15.8%	22.1%	9.8%	15.2%
Total	28.6%	13.5%	20.0%	26.9%	15.0%	19.9%	29.2%	12.9%	20.0%
% Receiving TD Benefits									
Narrow: PTSD	44.3%	19.0%	34.8%	41.6%	23.2%	32.1%	45.3%	15.1%	36.2%
Intermediate: Anxiety/Trauma Disorders (CCS/CCSR)	35.0%	12.0%	25.9%	37.6%	17.3%	27.8%	34.2%	9.5%	25.2%
All Other Presumption Conditions	30.3%	7.8%	16.8%	29.3%	9.4%	16.1%	30.7%	7.0%	17.2%
All Other Injuries	14.6%	2.9%	8.1%	15.6%	3.8%	9.1%	14.3%	2.6%	7.8%
Total	18.2%	4.2%	10.3%	18.6%	5.5%	11.0%	18.1%	3.6%	10.1%
% Receiving PD Benefits									
Narrow: PTSD	40.1%	21.1%	33.4%	34.7%	17.9%	25.9%	42.0%	24.1%	37.2%
Intermediate: Anxiety/Trauma Disorders (CCS/CCSR)	34.3%	18.6%	28.2%	37.2%	17.4%	27.3%	33.3%	19.1%	28.6%
All Other Presumption Conditions	32.9%	19.1%	24.4%	30.1%	18.4%	22.1%	33.7%	19.4%	25.5%
All Other Injuries	9.4%	8.3%	8.7%	8.4%	8.6%	8.4%	9.7%	8.1%	8.8%
Total	14.6%	11.0%	12.4%	13.0%	11.4%	11.9%	15.2%	10.8%	12.7%

	First Responders			Firefighters			Peace Officers		
	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total
% Receiving Settled Indemnity Benefits									
Narrow: PTSD	30.7%	3.0%	20.6%	29.4%	0.0%	13.8%	31.0%	5.7%	24.0%
Intermediate: Anxiety/Trauma Disorders (CCS/CCSR)	26.1%	1.7%	16.5%	27.4%	0.0%	14.0%	25.6%	2.5%	17.4%
All Other Presumption Conditions	25.8%	0.4%	10.3%	18.6%	0.2%	6.1%	28.2%	0.4%	12.2%
All Other Injuries	7.1%	0.2%	3.2%	5.3%	0.3%	2.5%	7.7%	0.2%	3.5%
Total	11.3%	0.3%	5.0%	8.2%	0.3%	3.5%	12.4%	0.3%	5.6%
N (Unweighted)	43,503	68,533	115,347	11,371	20,156	32,592	32,297	48,377	82,966

NOTES: Authors' calculations, 2008–2019 WCIS. Sample is limited to observations for which there are valid occupation codes; workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of the total FROI submissions and has complete medical bill data.

Table 4.8. PTSD and Anxiety/Trauma Disorder Claim Denial Rates, by Occupation

	First Responders		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				Total
Mental Health Diagnoses Present	**First Responders**	**First Responder Comparison Group**	**Firefighters**	**Firefighter Comparison Group**	**Ambulance / EMT**	**Peace Officers**	**Peace Officer Comparison Group**	**Security**	**Correctional Officers**	**All Occupations**
PTSD	25.8%	17.3%***	23.6%	12.0%***	15.9%	27.3%	19.6%***	17.0%***	24.47%	18.73%
N (Unweighted)	904	1,878	258	740	64	648	1,361	403	654	15,290
Intermediate: Anxiety/Trauma Disorders	28.9%	33.1%***	23.9%	24.3%	19.4%	30.9%	37.0%***	31.6%	38.4%***	33.77%
N (Unweighted)	2,056	7,393	494	3,020	145	1,565	5,171	1,203	1,866	75,244

NOTES: Authors' calculations, 2008–2019 WCIS. Sample is limited to observations for which there are valid occupation codes; workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of the total FROI submissions and has complete medical bill data. Statistical significance was tested for differences between each non-first-responder occupation group and the corresponding first-responder group.

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

of those in comparison occupations—a difference that was highly statistically significant (at the 1-percent level). Across all occupations, 19 percent of claims involving PTSD were denied.

The initial denial rate on PTSD claims for firefighters was 24 percent, roughly double the rate observed for firefighter comparison occupations. This denial rate was also estimated to be higher than the rate for ambulance drivers and EMTs, but the difference between this group and firefighters was not statistically significant at the 10-percent level.

The initial denial rate on PTSD claims for peace officers was 27 percent, substantially higher than the 20-percent rate estimated for the peace officer comparison group and the 17-percent rate estimated for security guards. Correctional officers had a claim denial rate (25 percent) that was close to, and not statistically different from, that of peace officers.

When we broadened the definition of mental health conditions to include other anxiety or trauma-related disorders, a more complicated story emerged; 29 percent of first responder claims with these diagnoses were initially denied, but this is now lower than the 33-percent rate estimated for workers in comparison occupations. Across all occupations, 34 percent of claims involving anxiety or trauma-related disorders were denied.

Firefighter claims involving anxiety or trauma-related disorders had a denial rate of 24 percent, which was close to, and not statistically different from, that observed for the firefighter comparison group. This denial rate was also not different from that estimated for ambulance drivers and EMTs.

Peace officer claims involving anxiety or trauma-related disorders had a 31-percent denial rate, which was statistically significantly lower than the 37-percent denial rate estimated for peace officer comparison occupations and the 38-percent denial rate estimated for correctional officers.

As discussed in Chapter 2, we define initial denials to include those reported on a First Report of Injury, which means the claim was denied either at the initial investigation stage or after being initially accepted—but before any form of indemnity benefits had been paid.

Table 4.9 reports initial denial rates for first responder claims by health condition. On average, first responder claims involving PTSD are much more likely to be denied than claims involving other presumption conditions. Denial rates averaged across all presumption conditions were 9 percent for firefighters and 13 percent for peace officers. The table shows that there was substantial heterogeneity across conditions, however, with higher denial rates for high-cost chronic conditions like cancer (16 percent for firefighters and 26 percent for peace officers) and heart disease (18 percent for firefighters and 26 percent for peace officers). Infectious disease claims for Lyme disease, meningitis, and tuberculosis were also rejected at relatively high rates. Low back impairments (5 percent) and hernias (6 percent) were less frequently rejected for firefighters than for peace officers (11 percent and 10 percent, respectively).

Overall, about a quarter of first responder claims involving PTSD were initially denied, with a slightly higher denial rate for peace officers (27 percent) than for firefighters (24 percent). Denial rates were slightly higher for the broader category of anxiety/trauma disorders (24 percent for firefighters and 31 percent for peace officers). Denial rates for other conditions covered by presumptions were lower than for mental health conditions.

Table 4.9. Proportion of Claims Initially Denied (Any Final Disposition), by Involvement of PTSD, Anxiety/Trauma Disorders, or Other Mental Health Conditions, by First Responder Occupation

	First Responders	Firefighters	Peace Officers
Claims with Mental Health Conditions			
PTSD	25.8%	23.6%	27.2%
N (Unweighted)	904	258	648
Anxiety/Trauma Disorders	28.9%	23.9%	30.9%
N (Unweighted)	2,056	494	992
Nonpsychotic Mental Disorders	27.0%	24.7%	28.0%
N (Unweighted)	3,275	799	2,071
Other Presumption Conditions			
Cancer	23.3%*	16.2%*	25.7%**
Heart Trouble	22.9%	18.2%	25.6%**
Hernia	8.9%***	6.0%***	10.7%***
Lower Back Impairments	8.4%***	5.3%***	9.7%***
MRSA	5.0%***	1.1%***	8.8%***
Pneumonia	9.0%***	8.3%***	9.5%***
Other Infectious Diseases (Lyme, Meningitis, TB)	28.2%	31.4%	26.0%
Total (All Other Presumption Conditions)	11.6%***	8.9%***	13.0%***
N (Unweighted)	26,337	7,786	18,587

NOTES: Authors' calculations, 2008–2019 WCIS. Sample is limited to observations for which there are valid occupation codes; workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of the total FROI submissions and has complete medical bill data. For claims with non-mental health conditions, statistical significance in denial rates was tested between the listed condition and PTSD.

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

As discussed above, the workers' compensation claim process is complex, and many claims that are initially denied are subsequently accepted and paid. To examine how common such reversals are, we estimated the proportion of claims involving PTSD that received indemnity benefits, stratified by initial denial status. These results are reported in Table 4.10.

Overall, first responder claims that were initially denied were 14 percentage points less likely (42.5 percent versus 56.3 percent for accepted claims) to receive indemnity benefits, a gap that is similar among firefighters and peace officers. However, about 38 percent of firefighter claims and 45 percent of peace officer claims that were initially denied ultimately received indemnity benefits.

Summary of Findings

Our analysis of workers' compensation claims filed before SB 542 took effect (in the 2018–2019 timeframe) showed that workers' compensation claims filed by firefighters and peace officers were more likely to involve PTSD than were claims filed by the average worker in California. Across all occupations, 0.4 percent of all workers' compensation claims involved

Table 4.10. Indemnity Benefit Receipt, by Initial Claim Denial Status

	First Responders	Firefighters	Peace Officers
PTSD Claims			
Denied			
TD	22.6%	20.3%	23.9%
PD	29.5%	24.8%	31.9%
Settlement	28.1%	15.9%	21.1%
Any Indemnity	42.5%	37.8%	44.8%
Not Denied			
TD	40.7%	37.4%	42.4%
PD	35.3%	26.4%	40.0%
Settlement	21.1%	12.9%	25.5%
Any Indemnity	56.3%	52.3%	58.4%
Anxiety/Trauma Disorder Claims			
Denied			
TD	14.1%	17.4%	13.2%
PD	19.9%	21.4%	19.5%
Settlement	14.3%	14.4%	14.1%
Any Indemnity	28.9%	31.5%	28.1%
Not Denied			
TD	32.4%	32.6%	32.3%
PD	32.8%	30.0%	33.9%
Settlement	17.7%	13.7%	19.3%
Any Indemnity	47.5%	48.1%	47.2%
Nonpsychotic Mental Disorder Claims			
Denied			
TD	13.2%	11.0%	14.2%
PD	30.6%	25.6%	32.4%
Settlement	18.4%	11.8%	20.6%
Any Indemnity	39.9%	31.6%	42.9%
Not Denied			
TD	17.4%	16.8%	17.7%
PD	23.4%	21.6%	24.3%
Settlement	9.0%	5.4%	10.7%
Any Indemnity	33.5%	31.5%	34.5%
All Claims			
Denied			
TD	5.2%	4.6%	5.4%
PD	14.0%	10.6%	15.2%
Settlement	8.3%	5.7%	9.2%
Any Indemnity	19.8%	14.5%	21.6%
Not Denied			
TD	8.4%	9.5%	8.0%
PD	8.1%	8.2%	8.1%
Settlement	2.7%	2.2%	2.9%
Any Indemnity	14.9%	15.9%	14.5%

NOTES: Authors' calculations, 2008–2019 WCIS. Sample is limited to observations for which there are valid occupation codes; workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of the total FROI submissions and has complete medical bill data.

Box 4.1. Answers to Research Questions 4, 8, and 9 Posed by CHSWC

RQ4: Do firefighters and peace officers file claims for mental health conditions at a rate statistically different from other employees?

A: *For firefighters, yes. Conditional on filing a workers' compensation claim, the proportion of workers' compensation claims involving PTSD is statistically significantly higher for firefighters (0.9 percent of workers' compensation claims) than for workers in comparable occupations, including ambulance drivers and EMTs (0.5 percent). For peace officers, results are mixed. Conditional on filing a workers' compensation claim, the proportion of peace officers' workers' compensation claims involving PTSD (0.7 percent) is statistically significantly higher than, but very close to, the proportion of workers' compensation claims involving PTSD for a comparison group of similar occupations (0.7 percent). The proportion of peace officer claims involving PTSD is also statistically significantly lower than the proportion of workers' compensation claims filed by security guards (1.1 percent) or correctional officers (1.5 percent) that involve PTSD.*

RQ8: Of the claims that involve mental health conditions, what percentage of these claims were primarily for mental health issues, and what percentage of these claims involved a mental health claim as a compensable consequence to a claim for physical injuries?

A: *Most (51 percent) firefighter and peace officer claims involving anxiety and trauma-related disorders were initially filed for physical injuries only. About a third were filed for mental injuries only. Remaining claims involving anxiety and trauma-related disorders were mostly filed as cumulative injuries not otherwise classified (13.5 percent of firefighter claims and 15 percent of peace officer claims), with a small number filed as combined mental and physical injuries (3.5 percent of firefighter claims and 1.8 percent of peace officer claims).*

RQ9: To what extent are mental health claims filed by public safety officers post-separation/termination claims, as opposed to claims for which the employer had notice during the term of employment?

A: *Firefighters and peace officers are statistically significantly more likely to file post-employment claims involving PTSD than are workers in similar occupations, but the vast majority (96.8 percent of firefighter PTSD claims and 97.9 percent of peace officer PTSD claims) of claims involving PTSD are filed during the term of employment. Interviews with claims administrators also found that first responder claims involving PTSD or other mental health conditions were filed during the term of employment.*

PTSD. Rates of PTSD involvement on claims were much higher for peace officers (0.7 percent) and firefighters (0.9 percent) than for the average worker in California. PTSD claims were also more common among workers in similar occupations than among the California workforce as a whole, however, and we found some important differences between firefighters and peace officers. PTSD claims were far more common for firefighters than for workers in comparison occupations, although the difference in rates from ambulance and EMT drivers was significant at the 10-percent level only. Meanwhile, PTSD claims for peace officers were filed at a similar or lower rate than in comparison occupations.

About a quarter of first responder claims involving PTSD were initially denied, including 24 percent of firefighter claims involving PTSD and 27 percent of peace officer claims involving PTSD. These rates were much higher than (and statistically significantly different from) rates estimated for PTSD claims filed among many groups of comparison occupations. This finding

does suggest that first responder claims involving PTSD were more likely to be denied than those in other occupations prior to enactment of SB 542. We do note, however, that first responder claims involving a broader set of anxiety and trauma-related disorders (in addition to PTSD) were less likely to be denied than were claims filed by workers in comparison occupations.

We also found that denial rates were about twice as high as those observed for other presumption conditions, although denial rates on claims for cancer and heart disease (which likely are more costly than other presumption conditions) were closer to those observed for claims involving PTSD.

We also analyzed the initially reported nature of injury on claims involving PTSD. Throughout the workers' compensation system, most claims (57 percent) involving anxiety and trauma disorders entered the system as physical-only claims. Claims from firefighters and peace officers were less likely (51 percent each) to be filed for physical injuries only. First responder claims involving anxiety and trauma disorders were much more likely than claims in other occupations (except for those among correctional officers) to be initially filed as claims for cumulative NOCs, which may involve physical injuries only or an unknown mix of physical and psychiatric injuries.

Throughout the workers' compensation system, the vast majority of claims involving PTSD were filed during the term of employment: only 1.4 percent of claims involving PTSD were filed after the term of employment. While firefighters (3.2 percent of PTSD claims filed post-employment) and peace officers (2.1 percent of PTSD claims filed post-employment) were more likely than workers in other occupations to file after a job separation, it was still very uncommon for claims involving PTSD to be filed after a job separation in any occupation. Results for anxiety/trauma disorders were similar.

Patterns of benefit receipt indicated that claims involving PTSD or anxiety/trauma disorders were more likely than other claims to result in TD benefits (35 percent of injuries), PD benefits (33 percent of injuries), or settlements (21 percent of injuries). This was also true in comparison with the average claim filed for other presumption conditions. Finally, we found that a high proportion of PTSD claims that were initially denied—38 percent for firefighters and 45 percent for peace officers—resulted in paid or settled indemnity benefits. This suggests that initial denials of PTSD claims were more frequently reversed than were workers' compensation claims filed by first responders as a whole.

Limitations

Ascertainment of PTSD and other health conditions was based on medical bills submitted to workers' compensation payers and reported to the workers' compensation system. Comparison of denial and indemnity benefit rates by claims-administrator type could be wrong if reporting quality differed. We limited the sample to claims administrators reporting SROI on 20 percent or more of claims, but it was impossible to rule out more subtle data-quality problems. Claims

administrators with unreliable reporting of SROI (and thus unreliable data on costs and other claims outcomes) were more common in the public sector than in other parts of the workers' compensation system. We therefore urge caution in interpreting differences across claims-administrator types in claims outcomes (e.g., receipt of indemnity benefits) derived from the SROI.

5. Proving the Job-Relatedness of Mental Health Claims

This chapter discusses the issues involved in proving the job-relatedness of mental health conditions listed on first responder claims. We first describe the perspectives of mental health professionals regarding the feasibility of proving or disproving the job-relatedness of mental health conditions, addressing research question 6. We follow this with the perspectives of both claims administrators and applicants' attorneys regarding what is needed to establish the job-relatedness of mental health conditions for first responders. We then conclude with a discussion that integrates all of this information with the information in Chapter 4, which describes the ultimate disposition of denied claims outcomes (i.e., either upheld or reversed) and how that relates to characteristics of the adjusting entity (i.e., self-administered or TPA), addressing part of research question 3. We conclude by providing comparisons to claims from other presumptions, addressing part of research question 5. These research questions are as follows:

- **RQ3**: Are claims by firefighters and peace officers for mental health conditions denied under circumstances where the condition appears to be job-related but the employee has/d difficulty proving that fact, and is/was the rate of denial statistically different from other claims by firefighters (or peace officers) that are subject to presumptions of compensability? NOTE: As part of the response to this question, the contractor should analyze the denial rates of claims subject to presumptions of compensability, whether denial rates are different based upon the entity adjusting the claims (third-party administered (TPA), self-administered, or insured) and describe the ultimate disposition of denied claims, either upheld or reversed.
- **RQ5**: Are claims by firefighters and peace officers for mental health conditions denied under circumstances where the condition appears to be job-related, but the employee has difficulty proving that fact, and is the rate of denial statistically significantly different from other claims and from other types of employees?
- **RQ6**: In addition to quantifying data requested in number 4 above, please consult with the professional mental health community to determine the feasibility of proving or disproving the job-relatedness of these mental health conditions.

Perspectives of Mental Health Professionals

The legislature specifically wanted to know "according to the professional mental health community, how feasible is it to prove or disprove the job-relatedness of mental health conditions for first responders?" In our discussions with mental health providers who treat first responders and who are used by the departments in our sample, we gathered their perspectives about the possibility of proving or disproving whether a mental health condition is job-related

(i.e., that an injury arose out of employment or happened during the course of employment, AOE/COE) and learned what elements are necessary to establish that job-relatedness.

All of the mental health professionals we interviewed indicated that it is feasible to prove the job-relatedness of mental health conditions for first responders. They explained that first responders are exposed to traumas daily. Both single incidents and cumulative trauma exposure can cause mental distress, injury, and PTSD. Many raised the point that first responder culture is to serve others and be strong and that this type of environment makes it difficult for first responders to seek help for mental issues. (See Chapter 3 for more discussion on this topic.) Several mental health professionals also explained that first responders must face stringent screening processes (i.e., pass psychological evaluations, the training, etc.) before being hired. This points to the healthy worker effect, which, in this context, would suggest that people who are prone to mental health conditions or who are less resilient to trauma may also be less likely to work as firefighters and peace officers, due both to self-selection and to the rigorous preemployment screening. For this reason, most mental health professionals felt that if a candidate was fit to become a first responder to begin with—that is, they had no symptoms or issues prior to the specific incident or trauma on the job—then it could be inferred that the current mental health injury listed on a workers' compensation claim is job-related. This perspective was the same for both incident-specific and cumulative injuries, and for both firefighters or police officers. Two mental health providers explained the following:

> To prove job-relatedness, you look at the firefighter's function before, look at stability before. If the firefighter has been fine before and then something happens, it is likely the incident is industrial, work-related. If there has been chaos and drama all along, you are looking at the medical records, when did their meds start, etc., what is the history. — *Southern California mental health provider who treats firefighters (FS-MH10)*

> As mental health professionals, we do a detailed history at the start of treatment. Police officers go through rigorous training, and they are at the top of their game. They do well in school, are athletes often. As human beings, people have problematic histories. Even with family problems and divorces, police officers get through the academy, they do not miss work, they do not take a lot of sick leave, they have generally pretty clean histories. In the past, if they are physically injured, they get treatment and they bounce back and go back to full duty. So, when they have a WC injury for mental health, there is a huge change in their behavior from before to when they file the claim. If it is documented just like other injuries, previous mental health treatment is not a problem. The main thing about proving job-relatedness is when the person got treated and what was it for. And at the time, was it disabling to their profession. That is the main question. If it didn't disable their ability to work, then it is not job-related. The injury or incident can also affect other parts of their lives, but that is after the fact, not before. *—Northern California mental health provider who treats peace officers (PN-MH03)*

Mental health professionals indicated that if clients are first responders, then you can expect them to have been exposed to lots of traumas. More so if they are in an urban area. (See Chapter 2 for a discussion of traumas and symptoms commonly experienced by first responders in this study.) As one mental health provider stated,

> On the clinical side, as a mental health provider, it is not realistic to expect a firefighter or a police officer to come in and have had a little trauma or some minor stress condition. That is just not realistic. Most departments have people with a lot of stress and trauma. The officers and firefighters don't realize that they should only talk about one thing with their WC claim or with the QME, and instead they tell their whole life history. Just because you had something happen recently, the straw that broke the camel's back, it is really the cumulative stress that is the issue. *—Southern California mental health provider who treats firefighters (FS-MH02)*

Mental health professionals did specifically raise aspects of peace officer jobs that are different from other public safety professions—aspects that point to these peace officers' required level of mental resilience and decisionmaking. Both of these characteristics can hinder peace officers' acceptance of most typical mental health professionals, but add to peace officers' acceptance of, and need for, culturally competent mental health providers. One mental health provider indicated,

> The amount of training and tactical decisionmaking under stress that is needed to have peace officers who can control what their bodies and minds do in threat conditions is enormous. That is a result of their training and the tactical decisionmaking training for stressful situations that they have as peace officers. For peace officers, having had this same training [as their mental health professional] adds to their acceptance that I as a mental health professional can be a positive mental health resource to them. We provide them with resources to regain strength—mental strength and resilience. *—Southern California mental health provider who treats peace officers (PS-MH01)*

Providers also spoke about first responders clients who were well into their careers, who needed mental health treatment because of the cumulative stress of exposure to trauma over time. (See Chapter 6 for further discussion about the timing of mental health treatment for first responders.) A mental health provider offered,

> Many police officers take psych evals and pass and excel through the job, and then 20 years later, due to the stress of the job and the repetitive trauma, they have a problem and need mental health treatment. *—Northern California mental health provider who treats peace officers (PN-MH01)*

Mental health professionals did mention that several complications arise because workers' compensation claims need to define a specific incident and be filed within the year of the date of injury (see Chapter 4). These two requirements complicate the claim filing process, particularly for first responders who file mental health claims for cumulative injury due to exposure to stress on the job over time. With cumulative injury or exposure over time, it is difficult to choose a defined incident or date of injury. In addition, when there is a defined injury date, the investigation tends to center around that one incident/date/injury rather than recognizing the full scope of trauma exposure over time. One mental health provider indicated,

> The claims process gets weird with cumulative trauma. You typically have a police officer in his job for 20 years, and then they get a stupid thing that pushes them over the edge. They stay at home crying and can't figure out why that small event is kicking their ass. That is where it gets harder in the WC process. When someone is in a shooting, or dealing with dead kids on a call, that is a much easier as a claim in the WC claim process. For example, there was a really crazy police officer incident a couple of years ago, but the WC claim that is submitted is about the

> smaller traffic issue that happened this year. This occurs for a few reasons. First police use a lot of coping strategies to get through traumatic incidents, and it takes more than a year for the officers to realize that they cannot bounce back and get past the incident. Then the spouse comes in and says they need to deal with it, but now it has been two years since the incident, and WC won't accept the claim because of the statute of limitations. You have to name the incident to WC within the one year. Some agencies do accept these, but some do not. *—Northern California mental health provider who treats peace officers (PN-MH01)*

Mental health providers commonly mentioned that, to prove or disprove job-relatedness, a claims administrator would request a mental health diagnosis from a QME along with documentation of the trauma(s) that established that it was an industrial injury (i.e., caused 51 percent by work). We heard from many mental health providers that they themselves do not always keep records with the details needed for workers' compensation claim requests. Claims administrators also said that reports from mental health professionals were lacking, citing a need for specific notes and more clarification that an injury or illness is work-related. Two claims administrators explained,

> Reports are often not worded correctly from the doctor. Or there is not enough detail about the treatment or the issues. Or the report was not received or was not received in a timely manner. Or the report is not clear. We ask the firefighter to go get reevaluated. *—Southern California claims administrator for firefighters (FS-CA01)*

> We usually delay the claim if the medical report or notes from the treating mental health provider does not confirm specifically that it is work-related, then we have to do a QME and then deny, unless the QME tells us that it is work-related. *—Northern California claims administrator for peace officers (PN-CA01)*

Mental health professionals also raised issues of timing. They indicated that first responders are slow to seek care and tend to "gut it out," prolonging the time between the incident and filing a claim or seeking care (see Chapter 6 for more details). A mental health provider disclosed the following:

> At various points in the process, a denial of a WC claim gets overturned. Sometimes the claim just needs more reports and information to come in. Or it is after the QME indicates that it is a mental health issue. The applicants' attorney usually hires a second opinion. If the opinions differ, sometimes there is a third opinion requested. This takes months. I keep treating, because I work for the client. If I work for the WC agency, there is nothing that can start, nothing moves forward until the agency decides to accept the treatment. Then WC typically refers to another mental health provider. I do not wait for the authorization from the WC insurer to start treating. My responsibility is to the client. *—Northern California mental health provider who treats peace officers (PN-MH03)*

Mental health professionals also pointed out that there is a difference between how mental health injuries and physical injuries are viewed in the workers' compensation system. One mental health provider verbalized the following:

> For mental health, there is not an x-ray that shows a broken bone. For PTSD, you cannot see it, so many feel that you cannot prove it. Some departments, insurance companies, others in the WC system think people are going to misuse the system. There are probably a few who do, but most

> first responders do not want to feel the way they feel. If you break your leg falling off of a roof, you broke it there. That is a defined incident. *—Northern California mental health provider who treats firefighters (FN-MH01)*

One mental health provider pointed out the irony in the workers' compensation system that childhood history is not an issue when it is a physical injury claim for a first responder. They stated,

> I see a lot of back and knee injuries for police. The mental and physical claims are most often combined in the critical incident cases. Of my cases, 50 percent do not have a co-occurring physical claim connected to a mental health claim. So half are mental health claims only. I have a client now who is retiring who has a solid PTSD claim with a back injury. He will retire on the back presumption, because it's way easier to prove than his PTSD. They don't fight those physical claims as much. If we do move ahead with a PTSD claim, the adjustors drag up all of these childhood issues. But ironically, for back issues, they don't ask if you played football as a kid. It is never related to childhood issues. *—Northern California mental health provider who treats peace officers (PN-MH01)*

Mental health professionals also mentioned that, to establish the job-relatedness of a mental health issue, they also needed to establish the credibility of the injury and of the client. As such, the feasibility of proving or disproving the job-relatedness of mental health conditions is often hindered or complicated by a first responder's substance abuse, childhood trauma, or military background. A mental health provider stated,

> If you have a PTS injury or an early childhood trauma, it gets really yucky with the paperwork with WC. Once the claims administrator or QME get into your records, the WC system assigns percentages. It gets messy. If you have childhood trauma or veteran history prior to being first responder, fire or police, it complicates the decision on whether the injury is job-related. They can say that it is not job-related or not all job-related. *—Northern California mental health provider who treats firefighters (FN-MH01)*

Most mental health providers also acknowledged that even if it is feasible to prove that a mental health injury is job-related, that does not equate to the claim being accepted. They talked about experiences where such claims were still denied (either initially, partially, or finally), where they were initially denied but eventually accepted (i.e., reversed), or where they were accepted but not upheld (i.e., mental health treatment was denied or not paid for). (See Chapter 4 for more discussion about these issues.) A mental health provider indicated,

> Navigating mental health claims gets a little confusing. it varies by claims administrator within insurance companies. Some deny the claims, some deny the billing, some authorize mental health treatment and say afterwards that they cannot pay for the treatment. As a mental health provider, you learn who you won't work with anymore. *—Northern California mental health provider who treats peace officers (PN-MH10)*

The experience of establishing the job-relatedness of mental health conditions was largely similar among all of the mental health professionals in this study, with one exception: mental health professionals who worked with first responders in urban departments spoke more often about the need for documenting trauma.

Perspectives of Claims Administrators

Claims administrators, like mental health providers, also commonly mentioned the need for documentation of the trauma to be provided as evidence for the workers' compensation claim. In addition, they cited a need for the QME (or other evidence) to establish a diagnosis and provide evidence that the mental health condition was an industrial injury. Claims administrators across department types indicated that they routinely accepted claims for shootings (for peace officers) and for incidents of falling through the floor of a burning building (for firefighters). A few claims administrators also indicated that those cities or departments that had a culture of accepting mental health claims for first responders would facilitate proving the job-relatedness of mental health conditions. One claims administrator offered the following:

> Shootings are the ones that get accepted automatically without questioning the injury. For fire, it would have to be something like falling through the floor, or an event that obviously causes PTSD. You can tell what those are. *—Northern California claims administrator for firefighters (FN-CA01)*

The experiences of establishing the job-relatedness of mental health conditions were similar for claims administrators across department types, with a few exceptions. One exception was that claims administrators who supported urban departments spoke more about the need for documenting trauma. The need for medical documentation and medical evidence also differed among claims administrators from departments with high and low denial rates of mental health claims. Departments with low denial rates indicated that first responder training and selection ruled out issues from their past, eliminating the need for documentation of prior history and allowing a sharper focus on the information and care related to the incident. Departments with high denial rates for mental health claims did not share this view; they focused on details from both the prior history and the incident.

A claims administrator from a police department with high denial rates stated,

> One of the biggest reasons we are seeing denials for mental health claims is the paperwork is not submitted with sufficient medical documentation to prove industrial causation or relationship. We need that paperwork. That is the biggest reason for denials. Every so often, you will see a mental health provider who says the mental health claim is not work-related, but that is not that common. With sufficient medical professional support from documentation, we usually pick it up and accept the mental health claim. *—Southern California claims administrator for peace officers (PS-CA01)*

A claims administrator from a fire department with low denial rates for mental health claims said,

> We have not had difficulties to prove or disprove if claims are job-related. The mental health provider has to have the supporting documentation about the incident to show that it is job-related. We need a diagnosis and have it tied to work. With that, we do not need to dig into any prior history. *—Northern California claims administrator for firefighters (FN-CA01)*

A few mental health professionals provided additional detail on what workers' compensation requires or needs, by stating,

> WC wants the delineation of the symptoms they are experiencing, and the onset of symptoms, to identify if there is a triggering incident and to see if there are other reasons for the symptoms. *—Northern California mental health provider who treats peace officers (PN-MH03)*

But this need to investigate prior history to understand the job-relatedness of claims appears to be changing due to SB 542 in a few of the high-denial departments we interviewed. We heard this from a claims administrator supporting a fire department with high denial rates for mental health claims:

> [In 2020, with the presumption,] if the mental health claim is for a police officer or firefighter, we do not really need to prove anything about it being job-related. . . . We now have to do investigations for other things. . . . It is really rare now in our city that a WC claim for a first responder is denied for psych. Our city is good at supporting them for mental health. *—Northern California claims administrator for firefighters (FN-CA03)*

However, claims administrators' perspectives differed slightly from those of the mental health providers we interviewed. For one, claims administrators mentioned that the timing of a claim, both in relation to treatment and/or the incident, played a role in proving or disproving that a condition was job-related. More particularly, a delay in seeking care or in filing a claim increased the need to understand the documented reason for care and contributed to disputes and denials. One claims administrator explained,

> For the extraordinary events like a shooting, we will also look at claims from any people in the proximity of the event. Those claims for those in the shooting are accepted; the others we review. If the incident also happened a year ago, we will look into that mental health claim more because of the delayed reporting. We need to understand why they did not report it earlier or make a claim earlier. *—Northern California claims administrator for peace officers (PN-CA12)*

Claims administrators also raised the issue that firefighters and police officers alike need to receive treatment from mental health providers within the workers' compensation system. We heard the following statements, for example:

> If the firefighter has been treated outside of the WC network, then we have the firefighter go to someone within the WC network and/or go to the QME. If the WC network doc or the QME says that it is a mental health diagnosis (that it agrees with the non-WC mental health provider) then the mental health claim gets accepted. *—Southern California claims administrator for firefighters (FS-CA01)*

> Job-relatedness is not affected by where the officer gets their mental treatment. Because if they file a mental health claim, they are required to treat within the medical provider network. They have to follow what was agreed to. If they refuse to go to a WC doctor, that could make it harder. *—Northern California claims administrator for peace officers (PN-CA12)*

In addition, claims administrators from departments with high and low denial rates differed in their views of apportionment for mental health claims. Departments with low rates of mental health claim denials generally felt that, given the training and selection process for officers and firefighters, there was no need for apportionment based on their past history. They raised this as part of the reason why prior history (i.e., veteran status, childhood trauma) was not as important as the details of the injury and the establishment of any change in behavior before and after the

incident. (This was the same viewpoint raised by mental health providers.) A claims administrator asserted,

> The testing a police officer has to go through to be a police officer eliminates what we are talking about for apportionment. —*Southern California claims administrator for peace officers (PS-CA01)*

Conversely, claims administrators from departments with high rates of mental health claim denials, in both Northern and Southern California, said that there is a need to understand the first responder's history and to review prior mental health treatment. These claims administrators explained,

> For the mental health claim, we need the history. We are looking for the mental health history. In certain situations, such as a police shooting, we don't need it. We would like to have it. We don't need it if there is a psychiatric overlay, like an officer-involved shooting. Especially if the claim is submitted close to the traumatic event. —*Northern California claims administrator for peace officers (PN-CA01)*

> When reviewing prior mental health treatment, you need to see what the mental health treatment is for. Especially if the symptoms are things like nightmares, where it is hard to see if it is job-related. Prior to 2020, police officers can be bringing something up from five to six years ago. So, we have to look at the situation at that time when they were getting treatment. It is equally as difficult if they didn't get treatment then. We need to see it was a substantial incident then. And why did they not seek treatment then? —*Southern California claims administrator for peace officers (PS-CA01)*

Claims administrators also mentioned complications investigating and proving job-relatedness when first responders were involved in substance abuse or were receiving disciplinary actions at work:

> One issue we see with mental health claims is substance abuse. I think what happens and what brings it to the fore is that individuals are using substances and it affects job performance, absenteeism. I think that they start to use PTSD and other mental health terms to file claims and to start to protect themselves. I agree there may have been an issue from the past, but at the time it happened, they were too afraid to deal with it. —*Northern California claims administrator for peace officers (PN-CA03)*

> It is harder to prove or disprove if mental health is job-related, and there are times when someone is right in the middle of a disciplinary action, and there is something that they should be disciplined for, and we will then get a mental health claim, so it is hard to determine what was the cause of the stress (the poor action being taken against them or the stress causing poor action). That makes it harder to navigate the causation for the mental health claim. —*Northern California claims administrator for peace officers (PN-CA12)*

Claims administrators indicated that proving or disproving the job-relatedness of a mental health condition is also more complicated when it is a cumulative-stress claim. This was true across the department types studied (i.e., fire/police, Northern/Southern California, urban/nonurban, low/high mental health claim denial rates). In this regard, claims administrators expressed the following:

> There is a threshold the first responders have to meet. The mental health claim has to come through medically, with documentation that it is work-related. With cumulative trauma, or stress over the course of their entire employment, we need to request more information from the doctor so that we can see it isn't because they were in the military or they are going through a divorce, etc. *—Northern California claims administrator for firefighters (FN-CA01)*

> The mental health claims from police officers that we question job-relatedness are those from the police officers on the verge of retirement, as many of those claims are cumulative-stress claims. *—Northern California claims administrator for peace officers (PN-CA12)*

Perspectives of Applicants' Attorneys

Applicants' attorneys also elaborated on their experiences proving and disproving job-relatedness and explained how things may change within the context of the SB 542 presumption.

Most applicants' attorneys mentioned that, before the presumption, the need for some mental health treatment and documentation prior to filing a claim helped substantiate job-relatedness. As one applicants' attorney described it,

> Some mental health treatment needs to be there to substantiate that there is a problem. You don't want a cop out there who is distressed with a gun. If you are his supervisor, you take them off the line and you do a fitness-of-duty check. Firefighters are in the same boat. I don't know how you solve that problem. That is the main depressing point in terms of mental health claims. If they are so bad that people are telling them to go in for treatment, they generally have PTSD. It is honestly better to have some treatment on record to show the claims administrator there is some PTSD treatment pointing to PTSD. It is a problem for the macho guys, as they won't get treated. I tell them to go back to work and get some treatment first, then file. Symptoms are not enough; you need some treatment or care there, as the symptoms can be from other places. *—Northern California urban applicants' attorney (AA-NU02)*

Applicants' attorneys echoed two other points we heard from mental health providers. The first point was that the psychiatric testing required to gain a position as a first responder ruled out the possibility that mental health issues were present before job sign-on. Their second point was that any mental health treatment that took place on the job before a related incident may result in an initial denial but not in an ultimate denial. An applicants' attorney asserted,

> Firefighter or police officers have passed all the psychiatric testing for the job. So then if they are now in need of mental health treatment, they need it. It is rare that you get someone as a first responder who had therapy previously, but usually if so, then it is for other things like marriage problems, not work-related issues. These may be denied for mental health treatment initially, but not an ultimate denial of mental health treatment. *—Northern California urban applicants' attorney (AA-NU01)*

When asked about the PTSD presumption, all of the applicants' attorneys reiterated that SB 542 had shifted their focus from causation to medical reporting: their job was to substantiate the injury and the diagnosis. They also mentioned that it is hard to corroborate events if a claim involves a single first responder. An applicants' attorney explained the following:

> Even with SB 542, I anticipate there is going to be a delay with a mental health claim. I build my case for trial knowing that it will be denied. But now with the presumption, it makes it easier

> because I need to only get medical reports. When there was not the presumption, then there was much more to do and to substantiate with documentation. Without the presumption, I have to establish credibility, prove the injury is credible, make my client credible, and all of these other things in addition to the medical reports. *—Northern California nonurban applicants' attorney (AA-NR03)*

Most applicants' attorneys also pointed out that SB 542 would not result in more timely processing of claims or even fewer initial denials. One applicants' attorney said,

> The PTSD presumption is going to have the firefighter or police officer claim start out proven as an industrial injury. But the firefighter or police officer is still going to have to meet the diagnosis, and they will still have to go through the QME and AME process. So, the presumption may not expedite the claims process. Like with a cancer case, after an AME or QME, they accept the WC claim. We should anticipate seeing pushback to being able to see if the rules apply for the PTSD presumption to the specific case in question. So, this will include cross-examination of the doctor on the psych diagnosis. *—Southern California urban applicants' attorney (AA-SU03)*

Applicants' attorneys did raise the point that medical reporting is more important with the presumption and that SB 542, the PTSD presumption, did not include anti-apportionment for disability. For most presumptions, anti-apportionment is not included in the Labor Code, but there is a section of the Labor Code—Labor Code 4663(e)—that lists all other presumptions. This section was last updated before the PTSD presumption, however, so PTSD is not included. An applicants' attorney explained,

> With the presumption, it is less about the job-relatedness of the injury, but more about getting the medical reports from the mental health clinicians about the treatment received and the diagnosis. The medical reporting is even more important now with SB 542 because of that. For example, with a current PTSD case, the first time my guy went into a therapist was this year, 2020. I usually ask if people have PTSD, "When have you gone to get any treatment for mental health?" because the defense does that. You cannot apportion treatment, but you can apportion for permanent disability. The PTSD presumption is the only presumption that they do not have apportionment. *—Northern California nonurban applicants' attorney (AA-NR03)*

Denial Rates of Claims Subject to Presumptions

Table 5.1 highlights differences in denial rates across types of claim administrators, which was also a question posed by Assemblymember Daly and CHSWC. (Overall denial rates for mental health claims and presumption conditions were reported in Table 4.9 and are repeated as column totals in Table 5.1).

For firefighter claims involving PTSD, the denial rate is dramatically higher for TPA claims (31 percent) than for those of self-administered employers (17 percent). Similar patterns are observed for other presumption-condition claims filed by firefighters, where the denial rate is 18 percent at TPAs and 5 percent at self-administered employers.

For peace officers, the denial rate on PTSD claims is only slightly higher at TPAs (29 percent) than at self-administered employers (26 percent), while the gap across claims administrator types

Table 5.1. Proportion of Claims Initially Denied (Any Final Disposition) by Involvement of PTSD, Anxiety/Trauma Disorders, or Other Presumption Conditions, by First Responder Occupation and Type of Claim Administrator

	First Responders			Firefighters			Peace Officers		
	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total
Claims with Mental Health Conditions									
PTSD	29.0%	21.7%	25.8%	31.0%	17.4%*	23.6%	28.6%	25.7%	27.2%
N (Unweighted)	571	305	904	124	125	258	449	180	648
Anxiety/Trauma Disorders	34.8%	20.5%***	28.9%	29.3%	18.0%**	23.9%	36.6%	21.8%***	30.9%
N (Unweighted)	1,170	819	2,056	238	236	494	600	367	992
Nonpsychotic Mental Disorders	33.7%	18.2%***	27.0%	31.7%	17.3%***	24.7%	34.5%	18.7%***	28.0%
N (Unweighted)	1,823	1,346	3,275	389	382	799	1,195	816	2,071
Other Presumption Conditions									
Cancer	32.0%	17.1%	23.3%*	34.4%*	9.2%*	16.2%*	32.8%	20.2%	25.7%**
Heart Trouble	37.0%**	12.6%**	22.9%	38.1%	9.0%	18.2%	36.6% **	15.3%**	25.6%**
Hernia	14.5%***	5.7%***	8.9%***	8.2%***	5.2%**	6.0%***	17.4%***	6.0%***	10.7%***
Lower Back Impairments	14.4%***	4.6%***	8.4%***	10.3%***	3.2%**	5.3%***	15.7%***	5.2%***	9.7%***
MRSA	24.6%	2.9%***	5.0%***	11.8%	0.0%***	1.1%***	35.5%	5.7%***	8.8%***
Pneumonia	15.8%***	4.0%***	9.0%***	15.4%**	2.9%**	8.3%***	16.0%**	4.8%***	9.5%***
Other Infectious Diseases	43.8%*	6.1%***	28.2%	55.4%*	0.0%**	31.4%	36.7%	9.9%**	26.0%
Total (All Other Presumption Conditions)	19.5%*	6.5%***	11.6%***	17.9%**	4.7%**	8.9%***	20.1%***	7.5%***	13.0%***
N (Unweighted)	10,242	15,480	26,337	2,289	5,308	7,786	7,986	10,172	18,587

NOTES: Authors' calculations, 2008–2019 WCIS. Other Infectious Diseases = Lyme disease, meningitis, or tuberculosis. For claims with mental health conditions, statistical significance in denial rates was tested across claims administrator types. For other presumption conditions, stars indicate statistically significant differences between denial rates for listed conditions and PTSD within each claim administrator type. The sample was limited to observations of complete records on key variables, for which occupation codes could be assigned with high confidence; records were submitted by claims administrators who had reliable reporting of SROI records and had at least one medical bill reported. Estimates are weighted to be representative of all FROI filed with complete records and with occupation codes assigned with high confidence.

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

on claims involving other presumption conditions (a 20-percent rejection rate at TPAs compared with an 8-percent rate at self-administered employers) is just as stark as that among firefighters.

Table C.3 reports analogous statistics for a definition of denial that includes denials not reported on the FROI, which most likely represent denials after the initial investigation stage. About 8 percent of firefighters and 6 percent of peace officers whose claims are initially accepted encounter a full denial later in the claims process. As with initial denials, these later denials are also more common at TPAs than at self-administered employers.

We also explored differences between the ultimate disposition of claims at self-administered employers and TPAs by comparing the probability that initially denied and initially accepted claims would later receive indemnity benefits. These estimates are shown in Table 5.2. (Overall rates of indemnity-benefit receipt, by initial denial status, are presented in Table 4.10.) In Chapter 4, we observed that initial denials of claims involving PTSD or other anxiety and trauma disorders were associated with substantially lower probabilities of receiving indemnity benefits, a pattern that was not observed for other presumption conditions or for the overall pool of claims filed by first responders.

Table 5.2 shows that this pattern is largely driven by claims handled by TPAs. Claims involving PTSD that are initially denied by a TPA have a 47-percent chance of receiving any indemnity benefits, while claims involving PTSD that are initially accepted by a TPA have a 72 percent chance. Among PTSD claims handled by TPAs, rates of temporary disability (TD) and permanent disability (PD) benefits receipt are 29 and 14 percentage points higher on accepted PTSD claims than on denied claims. Claims that are initially accepted are also more likely to receive a settlement, by 8 percentage points.

At self-administered employers, in contrast, the gap between indemnity benefits received on initially accepted and initially denied claims is just 2 percentage points: 32 percent of initially denied claims receive indemnity benefits, compared with 34 percent of initially accepted claims. Rates of TD benefit receipt (12 percent of initially denied PTSD claims versus 21 percent of initially accepted PTSD claims) drive this pattern, and we actually find that the opposite pattern holds for PD benefits and settlements. Rates of PD benefit receipt are actually higher for claims that are initially denied (25 percent of initially denied PTSD claims versus 20 percent of initially accepted PTSD claims), while even starker differences are observed for settlements: while 20 percent of initially denied PTSD claims handled by self-administered employers result in payment of settled indemnity benefits, only 2 percent of initially accepted claims result in settled indemnity benefits.

Turning to estimates for firefighters, rates of indemnity-benefit receipt among claims handled by TPAs are very similar to those for first responders overall, with two key differences: Settlements are less likely on initially accepted claims (31 percent with paid indemnity settlements) than on initially denied claims (27 percent with paid indemnity settlements), while the difference between initially accepted and initially denied claims in the rate of PD benefit receipt is more muted (a 5-percentage-point difference). At self-administered employers,

Table 5.2. Indemnity-Benefit Receipt by Initial Claim Denial Status

	First Responders			Firefighters			Peace Officers		
	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total
PTSD									
Denied									
TD	26.3%	12.4%	22.6%	26.3%	10.5%	20.3%	26.5%	13.8%	23.9%
PD	31.3%	25.3%	29.5%	31.7%	15.4%	24.8%	31.4%	32.7%	31.9%
Settlement	25.4%	19.6%	28.1%	26.9%	0.0%	15.9%	24.5%	11.2%	21.1%
Any Indemnity	47.0%	31.8%	42.5%	49.8%	19.6%	37.8%	45.9%	40.9%	44.8%
Not Denied									
TD	55.1%	21.4%	40.7%	52.2%	27.1%	37.4%	56.0%	15.6%	42.4%
PD	45.4%	19.6%	35.3%	36.8%	18.6%	26.4%	48.1%	20.6%	40.0%
Settlement	33.9%	1.7%	21.1%	31.2%	0.0%	12.9%	34.8%	3.5%	25.5%
Any Indemnity	71.7%	34.1%	56.3%	71.0%	39.4%	52.3%	71.9%	28.8%	58.4%
Anxiety/Trauma Disorders									
Denied									
TD	16.5%	6.8%	14.1%	22.1%	8.6%	17.4%	15.3%	5.8%	13.2%
PD	21.4%	16.1%	19.9%	29.7%	10.8%	21.4%	19.5%	18.9%	19.5%
Settlement	18.5%	3.6%	14.3%	24.9%	0.0%	14.4%	16.8%	5.5%	14.1%
Any Indemnity	31.9%	20.2%	28.9%	41.6%	15.8%	31.5%	29.5%	22.5%	28.1%
Not Denied									
TD	49.2%	13.7%	32.4%	46.9%	20.2%	32.6%	49.9%	10.6%	32.3%
PD	44.1%	19.4%	32.8%	41.8%	19.6%	30.0%	44.8%	19.2%	33.9%
Settlement	31.9%	1.1%	17.7%	29.0%	0.0%	13.7%	32.9%	1.6%	19.3%
Any Indemnity	65.7%	27.0%	47.5%	64.3%	34.1%	48.1%	66.0%	23.6%	47.2%
Other Presumption Conditions									
Denied									
TD	16.4%	8.1%	13.2%	13.7%	7.8%	11.0%	17.7%	8.2%	14.2%
PD	33.8%	25.5%	30.6%	31.8%	17.7%	25.6%	34.4%	28.9%	32.4%

	First Responders			Firefighters			Peace Officers		
	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total
Settlement	29.1%	0.6%	18.4%	20.6%	0.2%	11.8%	31.5%	0.8%	20.6%
Any Indemnity	46.9%	28.2%	39.9%	40.3%	20.6%	31.6%	49.0%	31.5%	42.9%
Not Denied									
TD	34.3%	7.8%	17.4%	33.5%	9.5%	16.8%	34.6%	6.8%	17.7%
PD	32.6%	18.4%	23.4%	29.6%	18.5%	21.6%	33.5%	18.4%	24.3%
Settlement	24.9%	0.3%	9.0%	18.0%	0.2%	5.4%	27.2%	0.4%	10.7%
Any Indemnity	53.1%	22.6%	33.5%	49.3%	24.0%	31.5%	54.4%	21.8%	34.5%
All Claims									
Denied									
TD	6.8%	2.7%	5.2%	5.4%	3.5%	4.6%	7.3%	2.4%	5.4%
PD	13.9%	14.5%	14.0%	11.7%	8.9%	10.6%	14.7%	16.3%	15.2%
Settlement	13.1%	0.8%	8.3%	8.2%	1.2%	5.7%	14.7%	0.7%	9.2%
Any Indemnity	22.1%	16.4%	19.8%	16.3%	11.9%	14.5%	24.1%	17.9%	21.6%
Not Denied									
TD	15.8%	3.0%	8.4%	17.1%	3.8%	9.5%	15.4%	2.6%	8.0%
PD	8.7%	7.9%	8.1%	8.0%	8.6%	8.2%	8.9%	7.6%	8.1%
Settlement	6.1%	0.2%	2.7%	4.8%	0.2%	2.2%	6.6%	0.2%	2.9%
Any Indemnity	21.8%	9.9%	14.9%	22.2%	11.4%	15.9%	21.7%	9.3%	14.5%

NOTES: Authors' calculations, 2008–2019 WCIS. Sample is limited to observations for which there are valid occupation codes; workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of the total FROI submissions and has complete medical bill data.

and in contrast to the results at self-administered employers for all first responders, firefighter claims involving PTSD are twice as likely to receive indemnity benefits (39 percent of initially accepted PTSD claims versus 20 percent of initially denied PTSD claims). Also, note that almost no settled indemnity payments for firefighters are reported by self-administered employers (1.2 percent of denied claims overall and 0.2 percent of initially accepted claims), and no settlements for firefighters are reported by self-administered employers on firefighter claims involving PTSD.

As with firefighters, rates of indemnity-benefit receipt among peace officer claims handled by TPAs are very similar to those for first responders overall, which likely reflects the fact that peace officers make up the majority of the first responder sample. Unlike firefighters, and in contrast to the pattern observed for peace officer claims handled by TPAs, peace officer PTSD claims handled by self-administered employers are actually *more* likely to receive indemnity benefits if they are initially denied (41 percent of claims receive indemnity benefits) than if they are initially accepted (29 percent of claims receive indemnity benefits). Rates of TD benefit receipt are slightly (2 percentage points) higher for initially accepted claims, but rates of PD benefit receipt and settlements are much higher for initially denied claims than for initially accepted claims.

It is unusual that initially denied claims are *more* likely to receive indemnity benefits. We do, however, see that the same pattern holds among other presumption conditions for peace officer claims processed by self-administered employers, which again stands in contrast to patterns of benefit receipt among other presumption claims filed by firefighters or other presumption claims filed by peace officers that are handled by TPAs. When we look at all claims filed by peace officers, we see higher rates of indemnity-benefit receipt on initially denied claims than on initially accepted claims at both TPAs and self-administered employers, a pattern that does not appear to hold for firefighters.

In short, we found substantial differences in the denial rates and ultimate benefit-receipt probabilities of different types of claims administrators. We also found these differences between firefighters and peace officers in the relative denial and reversal rates of TPAs and self-administered departments. These results may be surprising to some stakeholders, as most of the chiefs and almost all of the claims administrators we interviewed indicated that being TPA or self-administered should not make a difference in the denial rates of mental health claims. Two police chiefs stated,

> I don't think being self-insured impacts the workers' compensation claims. If you ask most employees, they don't even know what that means. The city pays on the insurance or on the workers' compensation side. Either way, they pay. We, the police department, and the city, work closely together because we want to get people healthy and back to work. —*Southern California police chief (PS-DC02)*

> No, I do not think that [having a TPA] impacts our pursuit of workers' compensation claims. Whether it is a broken arm or mind, there are certain processes and steps that need to be followed. If your shoulder is injured, then you do physical therapy first. There is a script. —*Northern California police chief (PN-DC02)*

However, claims administrators did indicate that TPAs had more red tape, and other claims administrators mentioned that with self-administered insurance, there was more of a relationship with and knowledge base of first responders, which provided context for the workers' compensation mental claims. Department chiefs noted that TPAs also caused issues that were difficult to address. One department said a lack of competition among the TPAs led to their having poor service, which was not under direct supervision of the department. Conversely, departments who handled their own claims could more easily change and improve their claims processes as needed. There was dissatisfaction with TPAs in many cases. Two claims administrators expressed,

> We are self-insured and so we might do things differently than a TPA. . . . We do our own claims and our own investigations. When it goes to a TPA, there is more red tape. We can manage claims easier as a self-insured department. We have more information. They are our coworkers. We work with these people. We want to make sure they get the best care they can get and continue to do the job for our city. Internally, it makes it a lot easier. —*Northern California claims administrator for firefighters (FN-CA01)*

> I think it makes a difference if a department is TPA or self-administered. I think it is easier for us because we are self-insured, because it is a lot of documentation and tracking. A third-party administration looking at it takes out the potential for biasing the acceptance or denial. They don't have the knowledge of the people involved. So, I think that the decision could be different. —*Northern California claims administrator for peace officers (PN-CA01)*

A police chief also commented,

> We are self-insured and have a TPA. I don't think being self-insured is a problem. For the TPA, the time is slower. Some get it immediately, while others get referred a couple of times, so it drags on. —*Southern California police chief (PS-DC01)*

We noted in Chapter 4 that claims involving PTSD and other mental health conditions were much more likely to receive indemnity benefits when handled by TPAs than by self-administered employers. It may be surprising to find that TPAs also have drastically higher initial denial rates for claims involving PTSD or other mental health conditions: higher rates of indemnity-benefit receipt would generally suggest a higher-severity caseload, but we would also expect a higher-severity caseload to result in fewer denied claims if claims administrators took the same approach to initial denial/acceptance decisions. Taken at face value, the evidence in Tables 5.1 and 5.2 would suggest that TPAs set a much higher bar than self-administered employers for initial acceptance of a PTSD claim, an interpretation that is broadly consistent with interview findings from several claims administrators. However, we were also unable to rule out that differences in data quality across claims administrator type may contribute to these findings. We therefore urge caution in interpreting Tables 5.1 and 5.2 until further investigation can be conducted using independent data sources.

Summary of Findings

During the debate of SB 542, the legislature specifically wanted to know "according to the professional mental health community, how feasible is it to prove or disprove the job-relatedness of mental health conditions for first responders?" During our discussions with mental health providers who treat first responders and who were used by the departments in our sample, we

Box 5.1. Answers to Research Questions 3, 5, and 6 posed by CHSWC

RQ3: Are claims by firefighters and peace officers for mental health conditions denied under circumstances where the condition appears to be job-related but the employee has/d difficulty proving that fact, and is/was the rate of denial statistically different from other claims by firefighters (or peace officers) that are subject to presumptions of compensability? NOTE: As part of the response to this question, the contractor should analyze the denial rates of claims subject to presumptions of compensability, whether denial rates are different based upon the entity adjusting the claims (third-party administered (TPA), self-administered, or insured) and describe the ultimate disposition of denied claims, either upheld or reversed.

***A**: Yes. A higher proportion of workers' compensation claims involving PTSD are denied for firefighters (23.6-percent initial denial rate) and peace officers (27.2-percent initial denial rate) than for workers in similar occupations, although some differences were not statistically significant. Initial claim-denial rates for both firefighters and peace officers were higher on claims handled by TPAs than on claims handled by self-administered employers, with these differences being marginally significant for firefighters and statistically insignificant for peace officers; however, differences in the denial rates on claims involving PTSD or other anxiety and trauma-related disorders were statistically significantly higher at TPAs for both firefighters and peace officers. Claims involving PTSD were also rejected at a statistically significantly higher rate than claims involving all other presumption conditions pooled together, although differences between denial rates for PTSD and cancer were only marginally significantly higher for firefighters.*

RQ5: Are claims by firefighters and peace officers for mental health conditions denied under circumstances where the condition appears to be job-related, but the employee has difficulty proving that fact, and is the rate of denial statistically significantly different from other claims and from other types of employees?

***A:** Yes. In-depth interviews with firefighters, peace officers, mental health providers, and claims administrators indicated that incomplete documentation of traumatic exposure is a common reason for apparently work-related PTSD claims to be denied. Analysis of WCIS data also indicated that claims involving PTSD are more likely to be denied when filed by firefighters or peace officers than when filed by workers in similar occupations; the difference between denial rates for firefighters and ambulance drivers/EMTs was not statistically significant, nor was the difference between denial rates for peace officers and correctional officers.*

RQ6: In addition to quantifying data requested in number 4, above, please consult with the professional mental health community to determine the feasibility of proving or disproving the job-relatedness of these mental health conditions.

***A:** In-depth interviews with mental health providers who treat first responders indicated a widespread belief that PTSD in first responders could often be attributed either to specific traumatic exposures, cumulative exposure to traumatic events, or retraumatization. Rigorous preemployment psychological screening was cited as a reason why new-onset mental health conditions among first responders could be attributed to employment. However, mental health providers also noted challenges in proving job-relatedness in the workers' compensation system before the enactment of SB 542.*

heard that it is feasible to prove that a first responder's mental health condition is job-related (i.e., AOE/COE) but that there are several challenges in doing so.

Mental health professionals indicated that if clients are first responders, then they expect these first responders to have been exposed to lots of trauma; more so if they are in an urban department. They explained that first responders are exposed to traumas daily, including both single incidents and cumulative trauma exposure, both of which, according to mental health professionals, can and do cause mental distress, injury, and PTSD. They also pointed out that first responder culture is to serve others and to be strong. Such an environment makes it difficult for first responders to seek help for mental issues. Importantly, mental health professionals pointed to the fact that first responders face stringent screening (i.e., pass psych evals, training, etc.) before joining as a firefighter or peace officer, thus ruling out issues with prior history or mental health conditions. Mental health professionals felt that if a first responder was fit to become a first responder and had no symptoms or issues before the specific job incident or trauma, then they could infer that the mental health injury being claimed was job-related. They spoke of treating first responders who were well into their careers and were having issues from the cumulative stress of exposure of trauma over time. They also specifically raised several aspects of peace officer jobs that were different from other public safety professions—aspects that could interfere with their accepting mental health professionals and lead them to resist mental health treatment. They indicated that once on the force, peace officers receive specialized and tactical decisionmaking training for uncertain and stressful situations so that they can control their minds and bodies in threat conditions. As a result, peace officers are conditioned to have high levels of mental resilience and decisionmaking skills that those in similar professions do not have. Such mental resilience, tactical decisionmaking ability, and self-control under threat hinders many peace officers from acknowledging any mental issue or need for help and instead spurs hypervigilance and decompartmentalizing.

Mental health professionals raised several other complications specific to the workers' compensation system. First, they indicated that workers' compensation claims need to define a specific incident and to be filed within the year of the incident/injury. The fact that most first responders are slow to seek care and tend to "gut it out" also prolongs the time between the incident and the claim filing or care seeking. The two requirements of claim filing (i.e., a defined incident, a one-year timeframe) further complicated the process for first responders who filed for injuries that were cumulative and caused by exposure to stress on the job over time. Thus, mental health providers commonly mentioned that claims administrators, in their efforts to prove or disprove the job-relatedness of a mental health claim, would request documentation including the date of injury and details about the incident. Most times, these claims administrators would also seek out a mental health diagnosis from a QME (rather than accepting the treating mental health provider's diagnosis) and documentation stating that the trauma was an industrial injury (i.e., caused 51 percent from work). Many mental health providers indicated that they did not always

keep records with the specific details needed for these workers' compensation claims requests (i.e., treatment notes that include the specific date of injury).

Most mental health providers also acknowledged that even if it is feasible to prove that a mental health injury is job-related, that does not equate to acceptance of the related mental health claim. They recounted experiences in which claims were still denied (either initially, partially, or finally) or were, after months of delay, initially denied but eventually accepted (i.e., reversed), all adding to the first responder's stress. Providers also mentioned that, even with accepted mental health claims, workers' compensation would often deny or not pay for the needed mental health treatment.

Claims administrators, like mental health providers, also commonly mentioned the need to receive documentation of the trauma, mental health diagnoses from QMEs, and/or establishment that mental health conditions were industrial injuries. Claims administrators across department types indicated they routinely accepted claims for shootings and incidents of falling through the floor of a burning building (for peace officers and firefighter, respectively). A few claims administrators also indicated that cities and departments with a culture of accepting first responders' mental health claims would facilitate proving job-relatedness.

Discussions about establishing job-relatedness were similar among claims administrators across department type, except that administrators supporting urban departments spoke more about the need for documentation of trauma. The need for medical documentation and medical evidence also differed across claims administrators from departments with high and low denial rates of mental health claims. Specifically, claims administrators for departments with low denial rates indicated that first responder employment training and selection ruled out prior history; this eliminated the need for documentation in that area, allowing a sharper focus on the information surrounding the incident and the necessary care. Claims administrators for departments with high denial rates did not share this view. Instead, these claims administrators, both in Northern and Southern California, emphasized a need for documentation of the first responder's prior history and mental health treatment.

Claims administrators, like mental health providers, indicated that proving or disproving the job-relatedness of the mental health condition is more complicated when it is a cumulative-stress claim. This was true across the types of departments studied (i.e., fire/police, Northern/Southern California, urban/nonurban area, low/high denial rates).

Further, we found that claims administrators' perspectives differed slightly from those of mental health providers in several ways. First, claims administrators pointed out that the timing of a claim, in relation to both the treatment and the incident, played a role in determining job-relatedness. Namely, delays in seeking care and in filing a claim contributed to disputes and denials, increasing the need to understand the documented reason for seeking care. Claims administrators also mentioned complications with investigating and proving mental health claims where substance abuse or disciplinary actions were involved.

Applicants' attorneys mentioned that, before the presumption, having some mental health treatment and documentation before filing a claim helped to substantiate that an injury was job-related. And they echoed two other points made by mental health providers. The first point was that the psychiatric testing required to gain a position as a first responder ruled out any prior mental health issues. Second, mental health treatment sought prior to the claim-related incident may result in an initial denial, but not an ultimate denial, of the claim. When asked about the PTSD presumption, all the applicants' attorneys reiterated that SB 542 shifted their focus from causation to medical reporting. After SB 542, their job was to substantiate the injury and the diagnosis—not the cause. Further, applicants' attorneys indicated that SB 542, the PTSD presumption, did not include anti-apportionment for disability. For most presumptions, anti-apportionment is not included in the Labor Code, but a section of the Labor Code—Labor Code 4663(e)—lists all other presumptions. This was last section of the Labor Code that was updated before the PTSD presumption, however, so PTSD is not included there specifically. They indicated that in time, once there are more cases, these details will be clarified.

In response to research question 3, we found from the WCIS data that claims involving mental health were much more likely to be denied than other presumption conditions. Specifically, denial rates are about twice as high as those observed for other presumption conditions, although denial rates for cancer and heart disease (which are likely more costly than other presumption conditions) are closer to those observed for claims involving PTSD.

In addition, evidence from the WCIS data indicated that there are more denials at TPAs but that the rates of indemnity benefit receipt were also different. Specifically, initial denials on claims involving anxiety/trauma disorders are more common in departments that use a TPA than in departments that self-administer, although this difference is far more pronounced for firefighters than for peace officers. Estimates suggest similar differences for PTSD claims, but differences in denial rates by claim administrator type were not statistically significant. We also heard in our interviews that policies varied widely, depending on the insurance type (self-administered versus TPA) and the department. Some departments tended to approve most mental health claims, while others indicated that they denied mental health claims as a matter of course.

Most chiefs and almost all claims administrators indicated that whether insurance was TPA or self-administered should not make a difference in the denials of mental health claims; however, some claims administrators did indicate that TPA had more red tape, while others mentioned that with self-administered insurance, there was more of a relationship with, and knowledge base of, the first responders, providing context to the workers' compensation mental health claims.

In terms of the ultimate disposition of denied claims (either upheld or reversed), compared with other conditions, including other presumption conditions, denials were associated with lower costs, which had implications for the cost impact of SB 542. Most of the workers we interviewed had their claims initially denied and then subsequently reversed.

Limitations

A notable limitation of this chapter's analysis of denial rates and claims dispositions by type of claims administrator is that data quality is likely to differ between TPAs and self-administered employers. We are concerned, in particular, that the extremely low rates of settlement receipt among firefighter claims at self-administered employers may reflect inconsistent reporting of settlements by some self-administered employers. TPAs generally process more claims and are likely to have more sophisticated information systems than government agencies. We have tried to minimize the scope for bias due to data-quality differences by excluding from our sample of WCIS data any data from claims administrators that report suspiciously low volumes of indemnity claims (a symptom of unreliable SROI reporting). More subtle differences in data quality between TPAs and self-administered employers who meet this criterion are difficult to rule out, however. As noted above, we urge caution in interpreting Tables 5.1 and 5.2 until further investigation, using independent data sources, can be conducted.

6. Access to Mental Health Care for First Responders

This chapter discusses the accessibility and timing of mental health treatment as they relate to first responders. We examine the types of mental health treatment that first responders seek out for job-related trauma, the avenues through which they seek and gain that care, and the mental health resources that fire and police departments provide them. We also include firefighter and peace officer perspectives on the barriers to seeking treatment and the differences in gaining access to and paying for mental health treatment inside and outside the workers' compensation system. Finally, we discuss the timing and sources of mental health treatment as they relate to claim denials, and we report estimates based on WCIS medical bill data for mental health claims by first responders. Altogether, this information answers research questions 7 and 10:

- **RQ7:** To the extent that claims for mental health conditions filed by firefighters (or peace officers) are being denied by employers, is this occurring following prior treatment that was covered by employer-sponsored or other health care coverage, where the treating provider(s) concluded the condition was job-related, or in cases where there was no prior treatment or diagnosis?
- **RQ10:** In the case of denied workers' compensation claims by firefighters and peace officers for mental health conditions, is there evidence that the claimant later sought and obtained care through employer-sponsored or other health care coverage?

Issues Accessing Mental Health Care

First responder access to mental health care is influenced by the stigma of mental health issues and the culture of their respective departments. It is also affected by the types of resources and support available to them.

The Stigma of Accessing Mental Health Care

Without prompting, all first responder interviewees said stigma was a key barrier to accessing mental health care. Similarly, the most common barrier to access mentioned by all applicants' attorneys was first responders' fear of the stigma related to seeking mental health treatment. Workers reported a range of reasons for this stigma. The majority of workers reported that seeking mental health care was "seen as a weakness" and thought that doing so would create such a perception, especially in the eyes of their peers or supervisors, that they were not able to do their jobs. Many of these workers also noted that they were afraid of losing their jobs if they sought mental health care, limiting their desire or ability to reach out for help or even to admit to themselves that they had a mental health issue. Applicants' attorneys stressed,

> Any admission of weakness or vulnerability by a police officer or firefighter is contrary to their culture. There is professional and personal denigration for filing a stress claim. *—Northern California urban applicants' attorney (AA-NU02)*

> The culture is not to show weakness. Any indicating there is any mental health issue is to show weakness. It is discouraged by the departments. A lot of clients think that they will be labeled. They want to work and get back to work; that is their main concern. The stigma and culture to not say anything is coming from everyone—other officers and from the administration. The culture filters down from the top. The culture is built from the top. The culture says that having mental problems is bad. *—Northern California nonurban applicants' attorney (AA-NR03)*

In addition, a majority of workers also noted that their departments offered little to no support for mental health care. In most cases, workers acknowledged that there were resources available for support, such as EAP, but said these resources did not help them with the mental health care that they needed to deal with trauma exposure at work. One of the main problems with resources such as EAP was that the providers were not culturally competent to help treat the issues that first responders face, and while peer support offered an understanding of the job experience and department context from fellow colleagues or peers, there were privacy concerns with this approach. More than half of the applicants' attorneys interviewed noted that workers were afraid of their superiors finding out they had sought mental health care, as they feared it could affect either their promotability or their ability to keep their jobs. These sentiments did not vary by police and fire department or by low- and high-denial departments. Applicants' attorneys explained,

> Stigma is more related to administrative staff or fellow officers, not with the family or friends. They are concerned about how it affects their promotability if they stay with the job. It's all supposed to be confidential. WC claims are not supposed to affect promotability. But WC claims impacting promotability does exist. *—Southern California urban applicants' attorney (AA-SU01)*

> The type of help that firefighters or police officers are seeking is case to case. Some have sought treatment through their private health plan or through the department programs where they do not let the powers that be know that they are seeking mental health treatment on their own. Usually when it relates to alcohol or drug use, the firefighter or police officer want to keep it quiet out of fear that their department would fire them. *—Southern California urban applicants' attorney (AA-SU02)*

Mental Health Resources Provided by the Department

For first responders, a key element to accessing mental health care was the level of resources provided by the department. From among the diverse set of departments across California, we identified a range of mental health resources and supports that both fire and peace officer departments offered. We then divided these departments into three categories: low-, medium-, and high-resourced departments. Medium- versus high-resourced departments were similarly split across self-administered and TPA, urban and nonurban, Northern and Southern California, and fire and police departments. The low-resourced departments tended to be nonurban and had high denial rates on mental health claims; high-resourced departments were the only ones to

have a carve-out. However, we caution against extrapolating these patterns, given the small sample sizes.

Departments categorized as low-resourced provided a basic set of supports and avenues for treatment that were common across the eight departments, such as an active EAP program, peer-support programs, and 4850 pay for workers who were off the job due to work-related injuries. Section 4850 of the Labor Code specifies benefits for time off, known as 4850 pay. A provision meant in part to remedy the relatively low cap on weekly benefits (two-thirds of the state average weekly wage) in comparison with the usual weekly wages of most public safety workers, 4850 pay tops up temporary total disability benefits to provide 100-percent wage replacement to first responders with work-related injuries. Medium-resourced departments also had wellness programs, mental health training, and PTSD support available for workers. Finally, high-resourced departments made several additional mental health- and PTSD-related resources available: this included giving their first responders funds and time to attend PTSD retreats and having a confidential app available through which workers and their families could access mental health services and support anonymously. Workers are typically limited to the resources available through their department or through their medical provider network's (MPN's) mental health provider list. So, although the availability of these additional resources is a step in the right direction in terms of expanding mental health support for first responders, many such resources are not evidence-based; in addition, often these programs and intense weeklong retreats "open a pandora's box" and then do not provide follow-up care or resources in the ensuing weeks, potentially making the problem worse.

In all departments interviewed, workers had access to an EAP program that was typically used as the first line of treatment for injured workers. Each worker received a certain number of EAP visits per incident to receive counseling and supports. Similarly, most departments had a peer-support program, through which department officers would support one another for a range of issues, including those related to mental health, without leadership involvement in sessions. After critical incidents, most departments also had debriefing sessions with a trained clinician who would help first responders process the incident and offer support. Finally, while claims were on delay, all departments would cover up to $10,000 of medical care as required by the Labor Code, and if there was an injury, all departments provided 4850 pay for up to a year to support a first responder as they recovered.

While EAP was offered, most first responders did not find the services useful, as most providers on EAP were not "culturally competent," and the number of EAP visits were not sufficient to deal with their mental health issues. "Cultural competence" in mental health care refers to the ability of a mental health clinician to relate effectively to the specific background of the client. This includes having a set of skills or processes that enables therapists to provide services that are culturally appropriate for the specific population they serve. In this case, cultural competence would include understanding first responder culture; the unique stressors in the

workplace and how those translate to home; the functional dysfunctionalities needed for first responders to do their jobs well; and their need for resistance, resilience, and recovery from daily exposure to trauma; it would also include knowledge of interventional skills, treatments, and resources relevant to first responders.

Several of the claims administrators and most of the mental health providers also indicated that the majority of EAP therapists were not trained in trauma-informed methods and thus were not equipped to treat PTSD and other trauma-related disorders. Another problem with EAP was that the number of visits was limited (ranging from five to ten sessions, depending on the department). This limited number was especially mentioned as an issue for more serious mental health issues by both mental health providers and across first responder type. Firefighters in Northern and Southern California related the following:

> I saw a therapist through EAP, which is three sessions. . . . You can't fix anything in three sessions. You have to know if they are socially competent for a first responder and our reality. I have used my own provider, and they told me to work out and eat healthy . . . I am never getting that type of help again. You have to know if the person is competent with firefighters or police officers. *—Northern California firefighter (FN-FR01)*

> They had me contact EAP through my workplace. Then I had to go through a phone interview with EAP basically stating why I needed EAP services, a description of my needs, and who I needed to see. Once I started seeing my therapist, I was only given, through EAP, five sessions. I was having anxiety about returning to work. Then I would be approved for the five sessions to see my therapist. Then I would have to call EAP for anther approval for another issue. I had to call EAP every five weeks. *—Southern California firefighter (FS-FR01)*

A subset of the departments interviewed provided additional supports to their injured workers. A few departments provided training on how to identify and support workers who had mental health issues from trauma exposure or PTSD/PTSI. (See Box 3.1 for details on these two terms. We use PTSD throughout this report.) This training covered how to identify individuals who may be at risk and then how to point them toward resources for treatment. A few departments also had access to culturally competent mental health providers who were able to see, understand, and treat first responders for trauma exposure. Finally, one department also added a wellness program that included yoga and meditation classes, which workers could take advantage of to support their mental health and wellness.

First responders noted that, in many cases, the basic resources provided were not sufficient to deal with their mental health issues from work-related incidents and trauma exposure. In many cases, first responders needed additional support and treatment, such as culturally competent mental health providers, to help them get back to work after an incident or to process cumulative exposure to incidents on the job. This perception was the same across first responders. Two police officers explained the following:

> Job number one is finding a culturally competent mental health provider. Even as a peer support at my agency, I did not know a deep well of culturally competent clinicians who were out there. *—Southern California peace officer (PS-FR01)*

> There is EAP and some peer support. My needs went beyond both of those things. The department does not understand what the mental health needs are, especially when it comes to PTSD. They do not understand that if you have a decent PTSD program, officers can go back to work. *—Southern California peace officer (PS-FR11)*

Departments with the greatest number of supports had resources targeted toward mental health and PTSD support. A few departments referred workers to retreat programs specifically for PTSD. These were intensive programs that required significant funds, typically provided by the department, and time off of work. A few departments belonged to a program that provided first responders and their families access to mental health resources through a confidential app made specifically for police officers. Finally, a few departments set up contracts with culturally competent mental health providers either on- or off-site. These mental health providers had worked with first responders in the past and had experience treating PTSD.

In regard to the retreats offered, first responders discussed two specific programs in the greatest detail—the West Coast Trauma Retreat (WCTR) and the Save a Warrior (SAW) program. Both required time off of work, which was difficult since there was a stigma related to having mental health issues, but only WCTR required payment for attendance. The SAW program was free, though first responders often paid a donation to attend. The use of retreats was more common among peace officers than firefighters. A firefighter and police officer both explained the following:

> At the time, my mental health provider said that I needed significant more work, therapy. She recruited me to a Save a Warrior program. I needed to get away from work for a while. But that had to be communicated to my bosses. Now I do not care anymore, but my paranoia at the time went through the roof. I ended up not telling them and using my own vacation time or sick time to go. That was one of the things that I should not have had to have it be brought up with my work. *—Southern California peace officer (PS-FR01)*

> I was rostered [for the West Coast Trauma Retreat] in 2018. I was approved, but I could not come up with $5K to go at that time. It was $5K for a week. How am I going to cover that? I did not talk to my department about it. There is such a stigma. People say people quit because they can't handle that stuff, so it's a stigma in the department to say that you cannot handle the job. *—Northern California firefighter (FN-FR02)*

Applicants' attorneys, mental health professionals, and workers alike spoke about the high cost to a department when a first responder took off work to receive treatment. However, we also heard, primarily from mental health professionals and applicants' attorneys, about the even higher cost to departments when police officers and firefighters retired or died from suicide due to their mental health conditions. A mental health provider stated,

> The impact on the department if the rookie washes out of training is different than if a seasoned officer leaves. . . . It is one thing to lose an employee because they want to move to a different agency or a different job. But to lose an employee because you did not take care of them—that is wasteful. *—Northern California mental health provider who treats peace officers (PN-MH01)*

Chiefs reported that their departments had the necessary behavioral health supports for their first responders but said there was work yet to be done to address the stigma associated with

accessing those resources. Said another way, first responders were not taking advantage of their departments' available resources because mental health issues were still highly stigmatized. Indeed, chiefs noted that far more resources were available now than in the past due to an increasing recognition of the mental health need among first responders. A fire and police chief explained the following:

> We have access to what we need and who we need for mental health. We have had enough incidences to know who should be included, who should not. We've had private debriefs with the officers and everyone on the scene. We have run the gamut. I look at harm reduction. You have to pay attention to the downstream result. When you find more harmed in debrief than helped, you need to constantly question the harm. Where we are is better than where we have been. *—Northern California police chief (PN-DC01)*

> There is still work to be done. Most of that is to break down barriers and to reduce the stigma. In my experience with the fire service, I have been here since 1998. We are miles down the progressive side of the road. We used to only have the EAP program. . . . (Now) there are a lot more tools. The department has started a resiliency program, and that has been rolled out to upper management. . . . I think we have come a long way and are making great strides, but we can do better providing folks and reminding them what is available to them. We want to get rid of the stigma, and that is where the tools come in. *—Southern California fire chief (FS-DC02)*

The Culture Within Departments

Most workers mentioned that the culture of a department helped determine whether they would seek mental health treatment. In particular, they said stigma limited their ability to seek care. Some workers, however, noted that their department culture facilitated care-seeking. Most of these workers described how their leaders expressed support for mental health, either by promoting the idea of getting care or providing resources for treatment. One firefighter expressed,

> We have a new fire chief. . . . His perspective is we need to take care of our people. To make sure that our people are there when we need them to be there. *—Northern California firefighter (FN-FR02)*

In that same department, the chief contracted with an outside mental health provider to provide counseling services that were confidential and culturally competent. The worker from this department highlighted how that changed the culture around seeking treatment:

> Having a mental health issue or PTSD has been kept quiet in our fire department until recently; I'd say in about the last year. I know other people that are going now to see the mental health provider on contract. Now we can talk about mental health and the stress of our jobs. Nobody talked about it before. It was under the carpet. *—Northern California firefighter (FN-FR02)*

In contrast, workers from departments where there was not a culture of seeking treatment mentioned that leadership issues led to their not seeking care. In particular, leadership had not put in place any support or structures for seeking care. Such support or structures are needed to help first responders once they are ready to seek care, so having them present increases the chances someone will reach out. One police officer observed,

> If we had real leadership in the department supporting mental health that would help. Where is the flowchart and process that indicates that, as a police officer, what you just experienced on a call sucks? And [on such a chart] it walks through the steps that you have to go talk to a mental health provider and talk to someone about the call. Eventually, the police officer is going to say, "This is what is bugging me," even if they initially do not want to say anything. *—Northern California peace officer (PN-FR03)*

Another point that arose in our discussions was that mental health care-seeking could be supported through alignment of the leadership. One way that some departments displayed such alignment was by conducting regular department-wide training sessions on how to recognize mental health issues and signs of PTSD. Another way leaders showed support was through chiefs who regularly held discussions about PTSD within their departments, with the aim of reducing the stigma around seeking and accessing care. This was a common practice across department types. Two police chiefs testified to this kind of leadership support:

> We know what to look for because we know what is important. We provide regular in-service training. We had [an expert] here for the training. What manifests itself, what to look for. We are trying to get people the training early, so they know what to do. We also offer wellness and resiliency training. There are different providers that have a background of credibly and are good messengers for young officers who do not know what any of this means. It is like maintaining a car. You don't run it until it goes out. You got to provide maintenance at regular intervals. We have not had a suicide. We don't want to contribute to the statistic. *—Northern California police chief (PN-DC02)*

> We do a lot of training at briefings for all officers and supervisors. Onboarding for sergeants also has a training on recognizing performance issues, coming in late a lot, not going to court, training, etc. The little things that creep up first. We also look for outward signs of stress. *—Southern California police chief (PS-DC01)*

Recognition of Trauma Within Departments

Department chiefs discussed the ability of their departments and themselves to recognize trauma in their first responders. Nearly all of the chiefs interviewed said that their organizations were doing a good job of recognizing trauma but that there was room for improvement. A fire and police chief indicated the following:

> [Recognition of trauma] is the biggest need still. To get not just a supervisor but a coworker to identify behavior patterns of signs and symptoms that may be bigger than just having a bad day. Our support programs need to get this out. This is where the resiliency training is going. *—Southern California fire chief (FS-DC02)*

> For sensitive cases, we check in with [the officer]. That is the debrief. We expect supervisors and managers to be in tune with their officers who identify when something is wrong. We have an early warning system for complaints to make sure we address any underlying issues. *—Northern California police chief (PN-DC03)*

Most chiefs also believed that they could recognize trauma in their workers. However, a few chiefs noted that, as time went on and they spent more time in command, they became more removed from their workers. So they would often need to rely on others in leadership who were close to first responders to recognize trauma. Two fire chiefs expressed,

> I feel comfortable with recognizing signs and symptoms of trauma. I was a peer support counselor in my previous post and had experiences on my own that let me see the changes in behavior or the signs of undealt-with trauma. *—Northern California fire chief (FN-DC02)*

> I would like to say yes, but for me, my direct reports are mainly administrative staff. We are all in individual offices, so I do not see and interact with them like when you are in a fire house living together. If I were in the house, then yes. I am far removed from folks. *—Southern California fire chief (FS-DC02)*

In order to monitor first responders for trauma, some departments had formal systems in place, such as tracking sick time and disciplinary incidents, while other departments had systems to more directly recognize acute and cumulative trauma. A police and fire chief offered the following:

> If we see any pattern of excessive sick time, discipline, or if find out something happened to an employee, those are red flags that we look for. We've looked at things differently in the last few years. *—Southern California police chief (PS-DC02)*

> The approach of recognizing signs and symptoms would be incident-dependent. If something happened at a particular day and time, then we can pinpoint the trauma of a firefighter to that event. We can use the firefighter call as the point of reference. Otherwise, if it is not incident-specific, the captains, fire chiefs, and other firefighters understand the differences in behavior of their fellow firefighter to know how that has affected a particular firefighter. Or the firefighter themselves can request that they seek help or gain help through the Firestrong website, which provides local resources and peer support names/contacts. Also, the firefighter could go through the battalion chief. *—Northern California fire chief (FN-DC02)*

Culture Among Peers and Stigma Around Mental Health Within Departments

Nearly half of the workers interviewed also mentioned the culture among their peers. In particular, workers admitted an inability to discuss mental health issues with peers. Further, they said that the lack of peer discussion or interaction on the topic increased the stigma around seeking care. One firefighter expressed,

> That is the culture in the fire service. . . . To keep the peace, most people will not say a [d—n] thing. There is a pecking order in everyone's house. Inherently, you carry that over into the workplace. You don't want to stir the pot. You want to work until you get off shift. I do not want to look weak. I want to look resilient. If there is a significant incident, you stay quiet, or someone has to be brave and speak up. Sometimes speaking up doesn't lead to a good response. It can be met with criticism, dark humor, embarrassment, a feeling of vulnerability, and then you lose your edge and cannot perform. *—Northern California firefighter (FN-FR01)*

Particularly in police departments, chiefs and mental health providers noted that there was a stigma around seeking and accessing care and that this stigma could be addressed by discussing mental health and PTSD within the department more often. Without these discussions, first responders and the department as a whole are both worse off, as those who did not seek care could have long-term issues that would affect them in their personal lives as well as on the job and with their partners or teams that rely heavily on each other. As one chief explained,

> In my messages to the firefighters in the field, I ask members to write the first draft. They include the signs and symptoms. My experience is, after an incident, where it was emotionally difficult, that is when I make the ask. When I was a captain, we had a traumatic event with a child. I asked

> if anyone needed help, and they said no. Years later, I was working overtime in another station, and one of those guys comes to me and he told me, "When I see you, I think of that incident." I tell him, "I do too," and I tell him I wish I would have sought help. My motivation is for the officers to call for it whenever they think it is appropriate. Even if the crew says they don't need it, you should still get the mental health provider to come debrief. There is no downside. I learn through incidents. —*Southern California fire chief (FS-DC04)*

Department representatives identified two major sources of stigma that kept first responders from accessing and seeking care; namely, pride and fear of losing their jobs, and this was particularly true in police departments. First responders were often concerned that if other people learned they were having mental health issues or receiving treatment, this would affect their ability to do their jobs. This concern arose from a long-held perception that those with mental health issues or PTSD just had an inability to suppress their feelings and, as such, were not up to the job. Department representatives who had experienced this noted that this perception is changing but is taking time and is still a work in progress. A fire and a police chief both expressed this idea as follows:

> In terms of mental health, it is hard enough for firefighters to make the initial call for treatment. They are embarrassed. They are ashamed and there is fear. Then they find out that they have to go tell three other people in the department and then also that workers' compensation may not pay for them to see the therapist. They also are worried about others and not wanting them to know all of the issues. —*Northern California fire chief (FN-DC01)*

> My generation of officers did not seek help. There was stigma. This current generation has a lot of people who seek help. But there are many others who won't. The way they are identified is mainly through the discipline process. . . . Now with mental health, we are going through a shift. Now we are messaging that it is okay to hurt, because the way we trained people was to shut off their feelings. When you see children, victims of crime, you have to shut it off. Then when you take off the uniform, the switch comes off. That was wrong. Now we say, if you need to talk, need time off, we need to work with you to get you to that point so that you can get back to work and be healthy. We are getting the message out. —*Southern California police chief (PS-DC02)*

Nearly all first responders spoke to this idea that pride and fear of losing their jobs were major barriers to accessing and seeking care. While most common among police officers, firefighters also reported this concern. Relatedly, first responders noted that they were in their jobs to help people and so were not comfortable asking for help for themselves. Two police officers shared this:

> Police officers fear losing their job. They fear that they will be ostracized or have someone judge them as mentally unstable and have their gun and badge taken away. That is the worst thing to happen to you as a cop. The police officers need to know it is safe to get help and to talk about their problems without their supervisor learning about them. —*Southern California peace officer (PS-FR11)*

> We as police officers don't ask for help; people ask us for help. Police officers are used to getting asked for help. —*Northern California peace officer (PN-FR03)*

A firefighter expounded,

> It is a sign of weakness for firefighters to ask for help. That is why I buried it for so long. That is also why when I went to get help in the beginning, I was super cautious. I was even worried others would know. I thought I could lose my job. Back then, I would never have had this conversation. —*Southern California firefighter (FS-FR01)*

First responders also noted that because seeking treatment was so stigmatized, it was not discussed in their departments. Without discussion, many first responders did not realize that the symptoms they were feeling were not normal but were also part of the job. One department supervisor who had sought mental health treatment for himself noted significant improvement in care-seeking after the stories of those who were treated were publicized in the department, removing the stigma to seek care. In addition, two police officers shared the following:

> I started having issues sleeping that weekend. I thought it was normal because it was a stressful environment. I thought that was the job. I continued on. —*Northern California peace officer (PN-FR02)*

> At our department, three of us have spoken about our experiences and workers' compensation. We showed the end results based on the treatment we had. Here I am. I lead you in this department. I have no issues now after treatment whatsoever. There are 75 or 80 people who have gone through the program now. —*Northern California peace officer (PN-FR02)*

For a discussion of the cultural issues surrounding the filing of claims, see Chapter 4.

Type of Treatment

Outside the department and workers' compensation, all first responders we interviewed sought treatment and were able to connect with culturally competent mental health providers. As one police officer explained,

> [The department] lead me to one of my mental health providers. . . . She is a former police officer, so she is not in awe or anything about what cops do. She did stuff like that. She is not impressed or getting sidetracked by my story. She speaks the same language. She also will dig right into you and be honest with her and yourself. —*Southern California peace officer (PS-FR01)*

All the first responders in our study sample had received mental health care for work-related trauma exposure (by design, given that we recruited them through mental health providers); however, all of them also had a diagnosis of PTSD. We also spoke to more firefighters than peace officers who filed PTSD claims (see Table 4.1). In addition, none of the firefighters in our sample had a military background, whereas all of the peace officers we spoke to were veterans. A third of the first responders (split across firefighters and peace officers) had also used mental health treatment in the past (unrelated to the claimed incident). The PTSD-specific care provided to the first responders we interviewed was primarily eye-movement desensitization reprocessing (EMDR), a common treatment for PTSD; several firefighters also received exposure therapy, and one peace officer received cognitive-processing therapy.

We heard in our interviews that medical bill denials for PTSD care frequently involved EMDR. To explore why denials of bills for EMDR might be especially prevalent, we reviewed

the 2018 American College of Occupational and Environmental Medicine (ACOEM) guidelines on treatment of PTSD, which were adopted as part of California's medical treatment utilization schedule (MTUS) effective April 18, 2019 (California Department of Industrial Relations, 2019). We found that, although the exposure therapy and cognitive behavioral therapy (CBT) components of EMDR are recommended (with evidence), the eye-movement component is not recommended (with insufficient evidence). These treatment guidelines appear to be broadly consistent with the qualitative evidence we heard about denials of medical bills for PTSD care.

Population Estimates of Unmet Need for Mental Health Care by Occupation

Although there are no quantitative data available relating specifically to first responders' experiences of stigma within California's workers' compensation system, the CHIS contains information about respondents' perceived needs for and receipt of mental health care, as well as reasons why those with unmet needs did not receive care. Table 6.1 shows that 12 percent of first responders—18 percent of firefighters and 10 percent of peace officers—reported that they either received mental health care or felt they needed help for emotional, mental health, or substance use issues in the past year. Firefighters (18 percent needed or received care) were slightly more likely than comparison workers (15 percent) to have received or needed care, but they were less likely than ambulance drivers and EMTs (23 percent) to have received or needed care. Peace officers (10 percent) were less likely than comparison occupations (18 percent) or security guards (19 percent), but more likely than correctional officers (4 percent), to have received or needed care in the past year. By comparison, 19 percent of all California workers—similar to firefighters, but higher than peace officers—received or needed care in the past year. With the exception of security guards, most workers who identified a need for treatment reported receiving some mental health or substance use care.

The estimates in Table 6.1 that are most relevant to the issues discussed in this chapter are those that describe the reasons why respondents with unmet needs for mental health and substance use care did not receive treatment. The CHIS allows respondents to name one or more of four specific reasons, which we grouped into two (non-exclusive) categories. We coded respondents as reporting difficulty with access to care if they named "cost of treatment" or "difficulty getting an appointment" as reasons for not receiving care. We coded respondents as reporting stigma if they said that they "did not feel comfortable talking with a professional about personal problems" or did not receive care because they were "concerned about what would happen if someone found out" they had a problem." The sample sizes of first responders answering these questions were very small (14 firefighters and 14 peace officers), and differences across occupational groups were generally not significant. Even so, these estimates provide some suggestive evidence that give context to our qualitative findings on stigma and access to care. In the absence of other estimates, we also used these responses to inform our choice of assumptions when analyzing the potential costs of SB 542 (see Chapter 7).

Table 6.1. Unmet Need and Reasons for Not Receiving Mental Health/Substance Use Disorder Care, by Occupation, 2013–2019 CHIS

Occupation Group	First Responders and Comparison Groups		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				All Workers
Occupation	First Responders	First Responder Comparators	Fire-fighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
Need for Mental Health Care										
% Felt Needed Help for Emotional/ Mental/ Substance Use in Last Year	12.0%	15.3%	18.4%	15.0%	23.2%	10.0%	17.5%	19.3%	3.7%	18.9%
Use of Care for Mental Health(MH) /Substance Use (SUD) in Last Year										
PCP or GP for MH/SUD in Last Year?	5.0%	6.2%	1.7%	5.7%	13.7%	6.3%	7.1%	6.2%	2.9%	7.5%
Psychiatrist, etc. for MH/SUD in Last Year	8.7%	7.6%	11.1%	7.1%	12.4%	7.8%	9.4%	6.0%	5.0%	10.5%
Primary Care, PCP, or Psychiatrist?	10.1%	10.7%	11.7%	9.4%	15.3%	9.5%	12.8%	8.2%	3.8%	13.6%
N (Unweighted):	479	5,761	136	3,065	75	343	4,235	372	124	73,936
Reason for Seeking Care										
Mental Health	93.2%	90.2%	92.9%	85.0%	100.0%	93.4%	94.9%	80.3%	100%	92.4%
Substance Use Care	3.0%	5.9%	0.0%	9.2%	0.0%	4.3%	2.9%	4.2%	0.0%	3.2%
Both	3.8%	4.0%	7.1%	5.8%	0.0%	2.3%	2.1%	15.5%	0.0%	4.4%
N (Unweighted):	51	661	15	296	10	36	563	48	14	10,317
Reason for Not Receiving Care Among Those Needing It										
Access (Cost OR Hard to Get Appointment)	34.5%	52.7%	20.2%	55.4%	66.7%	55.1%	50.0%	59.4%	10.9%	57.5%
Cost of Treatment	34.2%	45.1%	19.8%	49.4%	66.7%	55.1%	41.0%	53.9%	10.9%	51.3%
Hard to Get Appt	1.2%	18.3%	0.4%	19.8%	51.2%	2.3%	20.9%	23.2%	0.0%	17.8%
Stigma (Not Comfortable OR Someone Found Out)	36.3%	38.4%	3.9%	39.5%***	57.2%**	83.1%	39.7%**	36.9%**	29.3%	39.5%
Not Comfortable	29.7%	33.9%	3.2%	36.0%	53.3%	67.9%	36.1%	36.9%	29.3%	29.4%
Someone Found Out	11.1%	13.0%	3.9%	11.8%	55.0%	21.6%	11.4%	25.0%	0.0%	23.1%
Other Reasons	48.0%	35.9%	75.9%	30.3%	33.3%	7.7%	38.3%	36.3%	59.8%	28.6%
N (Unweighted):	28	348	14	200	8	14	560	34	5	4,864

NOTES: SUD = substance use care. Authors' calculations, 2013–2019 CHIS. Significance of occupational differences reported only for stigma (not comfortable OR someone found out) and access (cost OR hard to get appointment).

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

Most peace officers (83 percent) with an unmet need for mental health or substance use care identified stigma as a reason for not obtaining treatment: 68 percent did not feel comfortable talking with a professional about their personal problems, and 22 percent (not mutually exclusive) were concerned about what would happen if someone found out they had a problem. This was a much higher prevalence of stigma than in the peace officer comparison group (40 percent reporting stigma), the security guard group (37 percent reporting stigma), and the correctional officer group (29 percent reporting stigma); and their differences from the peace officer comparison group and from security guards were statistically significant at the 5-percent level. Many peace officers also identified the cost of treatment (55 percent) as a reason for not receiving care, a rate that was similar to that of security guards (54 percent) but higher than that reported by the peace officer comparison group (41 percent) or by correctional officers (11 percent). These differences were not statistically significant, however.

Firefighters with unmet needs for mental health care reported a different set of reasons for not receiving care. Only 4 percent identified stigma as a reason, and only 20 percent identified access as a barrier (nearly all of whom named cost). There were much lower rates compared with either the firefighter comparison group (40 percent reporting stigma, significantly different from firefighters at the 1-percent level) or with ambulance drivers and EMTs (57 percent reporting stigma, significantly different from firefighters at the 5-percent level). For context, California workers with unmet health care needs (across all occupations) were more likely to name access problems (58 percent) rather than stigma (40 percent) as a reason for not receiving care.

Given that health insurance coverage is essentially universal among firefighters and peace officers in California, and given that we conducted this study after state and federal mental health parity laws were significantly strengthened, it is troubling to see that so many peace officers named cost as a barrier to receiving mental health and substance use treatment. We were also surprised by the sharp contrast between the proportion of firefighters and peace officers who named stigma as a reason for not receiving care. Note, however, that 76 percent of firefighters with unmet needs did not name any of the reasons available in the CHIS as a reason for not receiving care, which leaves us with little usable information from the CHIS about why firefighters had unmet mental health care needs.

Timing of Mental Health Treatment

Mental health treatment and the timeframe in which it is sought out, either in relation to a work-related incident or a workers' compensation claim, can vary. Among the first responders we interviewed, however, it took longer for firefighters to find and obtain treatment from a culturally competent mental health provider than it did for peace officers (a median of 6.5 months versus 1.5 months, respectively, from the time the individual decided to reach out for help). Not many first responders we spoke to used EAP (three firefighters, two peace officers). Half of the first responders were referred to a culturally competent mental health

provider through their departments (either their captain or lieutenant, or the claims adjuster or in-house psychologist); several were referred to a culturally competent mental health provider from a "buddy" at work. Only one used the MPN list.

The overall length of treatment was shorter for peace officers than firefighters (a median of 7.5 months versus 12 months, respectively). Further, both first responders and mental health professionals indicated that the claims process itself often prolonged treatment; particularly in the case of denied or delayed claims, first responders would need extra time in therapy to deal with the issues created by their department or city not accepting their need for treatment, either initially or ultimately. This was compounded by their feeling ostracized by colleagues and the stigma of needing mental help. Mental health professionals also indicated that first responders were slow to seek care and tended to "gut it out," prolonging the time between the incident and filing a claim or seeking care. (See Chapter 6 for more details.) This behavior aligns with the delayed care-seeking found among veterans with PTSD (Goldberg et al., 2019; Spoont et al., 2014).

The timing of mental health treatment delivery for first responders varied in relation to when they filed their workers' compensation claims. We heard from a similar number of injured workers who started mental health treatment for job-related conditions before and after filing their workers' compensation claim, whether their claim was for mental health only or included a mental health component to a physical injury. Of those workers whose claims were denied, half sought the needed mental health treatment before receiving the denial, and half started after. This addresses research question 7 about the timing of treatment and denied claims. We also heard from claims administrators and applicant attorneys who counseled first responders to start mental health treatment for job-related conditions before filing a claim, because they felt that such prior treatment would assist in justifying the claim. An applicants' attorney voiced the following:

> It is honestly better to have some treatment first to show the claims adjustor there is some PTSD treatment pointing to PTSD. It is a problem for the macho guys. I tell them to go back to work and get some treatment first, then file a claim. Other symptoms are not enough to prove job-relatedness; you need some treatment or care there. The symptoms can be from other places. —*Northern California urban applicants' attorney* (AA-NU02)

The workers' compensation process also delayed treatment for those who received care after filing a claim, as these first responders would wait to receive claim acceptance or approval before starting treatment. In our sample, the eight claims that were initially denied were ultimately reversed. The median time from claim filing to workers' compensation approval of mental health treatment for claims that were initially denied was six months (ranging from two to 15 months) compared with the median 3.5 months for claims that were filed and initially accepted (i.e., not initially denied). That means first responders were without mental health treatment for 2.5 to 3 months while awaiting approval of mental health treatment. Mental health providers also concurred that first responders should seek treatment sooner rather than later.

The first responders we spoke to sought mental health care both through the workers' compensation system and outside the system (primarily via self-pay). Many who used the workers' compensation system also incurred costs and relied on self-pay until their claims were approved (which most times was after an initial denial). The benefit of treatment sought outside workers' compensation is that it is anonymous and can occur before a first responder has decided to file or has gained workers' compensation acceptance for treatment. However, the downside of this route is that the first responder must have the ability to pay for treatment themselves.

Payment

We heard from workers and mental health professionals alike that claim acceptance does not ensure that treatment will be paid for. Treatment can also follow an accepted workers' compensation claim, but given the length of delays and denials, first responders typically do not wait but seek care on their own, requiring self-pay.

Mental health providers indicated that on rare occasions, a first responder used employer-sponsored health insurance for mental health treatment. This was possible only when an injured worker did not yet have an accepted workers' compensation claim, however (as an accepted claim determines that the injury is work-related). By the same token, almost all mental health providers indicated that when they first took on first responders as clients, if the exposures, traumas, and symptoms discussed were job-related (regardless of whether they have filed a claim or have an accepted claim), they could not bill employer-sponsored or other group health insurance. Once a workers' compensation claim is accepted, employer-sponsored health insurance will not cover mental health treatment related to the injury, assuming it will be covered by workers' compensation. This addresses research question 10.

Mental health providers can take reimbursement from workers' compensation or receive payment from employer-sponsored health insurance or self-pay. Most mental health providers mentioned that workers' compensation rates are much lower than their typical rates and that the workers' compensation system is difficult to work with, so they opt for self-pay in most cases. Before a claim is filed, an injured worker may be able to pay for a mental health provider through their insurance if the provider is in network. Then if a claim is accepted and the injury determined to be work-related, workers' compensation will assume responsibility for paying for care. In these cases, access to care is determined by how much workers' compensation is willing to cover (in terms of the amount of treatment and the reimbursement per visit) and/or the ability of an injured worker to pay out-of-pocket if workers' compensation will not cover the treatment that is recommended. A police officer and firefighter admitted the following:

> I paid via self-pay. I called my health care provider, and they said they would not touch it because it was work-related. I did eight weeks [at the program]. I paid, self-pay. —*Southern California peace officer (PS-FR11)*

> I put in my workers' compensation claim for PTSD March 2019. It's now August. Private insurance won't pay for anything since it is a workers' compensation issue. —*Southern California firefighter (FS-FR01)*

Most workers discussed issues with paying for care. Only three of the first responders we spoke to had their treatment covered (two through workers' compensation and one through a contract through their city/union); the remaining ten paid out-of-pocket. Seven received partial payments for treatment after receiving denials and hiring applicants' attorneys. Also, none of the first responders were aware that workers' compensation would cover needed mental health care while claims were initially investigated. Given the difficulty with getting claims accepted and the long delays between filing and getting a final adjudication, nearly all injured workers we interviewed opted to pay for their mental health care through self-pay or support from the department or other associations. As one police officer shared,

> [My mental health provider] was paid through my membership with the [Police Officer's Association (POA)]. It was trial and error as we vetted it, and it was the decision of the POA to pay for it. . . . Within months, it turned from the POA paying for it to asking our city to cover it through the department. *—Southern California peace officer (PS-FR01)*

First responders were reluctant to use group health insurance for treatment of job-related injuries because there was a high chance their treatment would be denied and they would be on the hook for the payment after the fact. In most cases, first responders opted to use EAP while waiting for a claim to be processed because it was predictable and offered at least some support while they identified more specific trauma-focused, culturally competent mental health care. A mental health provider indicated,

> The managed health care side sometimes denies treatment. They deny it after the fact. The client then is on the hook for the treatment sessions. This happens in one in ten clients. Insurance covers different things. They balk at acute stress or PTS injury because they suspect it is work-related. *—Northern California mental health provider who treats firefighters (FN-MH01)*

Returning to Work After Treatment

Most applicants' attorneys and mental health professionals pointed out that firefighters and police officers with mental health claims had difficulty returning to work on full duty after treatment. Many times, first responders required a period of modified duty before they could safely return to work. Mental health professionals indicated, however, that with the appropriate treatment, most all firefighters and peace officers could eventually return to full duty, and this was confirmed by the majority of first responders we talked to. One mental health provider explained,

> I have an officer who was injured in September. With WC, I would have to wait until January to treat, so a four-month wait. So in the interim, I tried to keep them stabilized. By January, they were already ready to go back to work, off of 4850. If they filed then, it could be considered a malingering claim. It was really endangering to the officers to follow this process, and it happened this way all of the time. *—Northern California mental health provider who treats peace officers (PN-MH02)*

WCIS Estimates of Medical Bill Denials on Claims Involving Mental Health Conditions

Some workers noted that they had experienced medical bill denials for psychiatric care to treat PTSD even after a claim was accepted. To explore whether claims for mental health conditions were more likely to be denied than claims on other types of injuries, we used medical billing data to summarize bill counts, charges, and payments for first responders with anxiety/trauma disorders listed in their workers' compensation claims versus those without such disorders listed. We restricted attention to bills submitted in the first two years of the claim (measured from the earliest service date for medical care billed to workers' compensation). We focused on this definition rather than on PTSD claims narrowly to provide larger samples that would allow us to examine the denial rates of specific types of claim administrators. For workers with anxiety/trauma disorders, we separately calculated these statistics for claims with mental health diagnoses present, as opposed to claims with no mental health diagnoses present. As a measure of claim denials, we report both the proportion of bills denied (i.e., the mean denied bill count divided by the mean bill count), the proportion of charges associated with denied bills, and the ratio of payments to charges. These estimates are reported in Table 6.2.

Table 6.2. Medical Bill Counts, Charges, Denials, and Payments for First Responders with Claims Involving Anxiety/Trauma Disorders, by Occupation and Type of Claim Administrator

	First Responders	Fire fighters	Peace Officers
Claims Involving Anxiety/Trauma Disorders			
All Medical Bills			
Mean Count of Bills Submitted at 24 Months, Any Diagnosis	26.3	26.2	26.3
Mean Count of Bills Denied at 24 Months, Any Diagnosis	6.9	7.1	6.9
Mean Count of Denied Bills as % of Mean Bill Count, Any Diagnosis	26.4%	26.9%	26.1%
Mean Charges Submitted at 24 Months, Any Diagnosis	$29,669	$28,101	$30,204
Mean Charges on Denied Bills at 24 Months, Any Diagnosis	$8,174	$6,293	$8,857
Mean Charges on Denied Bills as % of Mean Charges, Any Diagnosis	27.6%	22.4%	29.3%
Mean Paid Amount at 24 Months, Any Diagnosis	$9,824	$10,630	$9,514
Mean Paid Amount as % of Mean Charges, Any Diagnosis	33.1%	37.8%	31.5%
Medical Bills with Mental Health Diagnoses Present			
Mean Count of Bills Submitted at 24 Months, Mental Health Diagnosis	3.97	4.16	3.89
Mean Count of Bills Denied at 24 Months, Mental Health Diagnosis on Bills (Intermediate Definition)	0.9	1.0	0.8
Mean Count of Denied Bills as % of Mean Bill Count, Mental Health Diagnosis on Bills (Intermediate Definition)	21.7%	24.7%	20.5%
Mean Charges Submitted at 24 Months, Mental Health Diagnosis on Bills (Intermediate Definition)	$2,830	$3,402	$2,616
Mean Charges on Denied Bills at 24 Months, Mental Health Diagnosis on Bills (Intermediate Definition)	$396	$575	$329

	First Responders	Fire fighters	Peace Officers
Mean Charges on Denied Bills as % of Mean Charges, Mental Health Diagnosis	14.0%	16.9%	12.6%
Mean Paid Amount at 24 Months, Mental Health Diagnosis on Bills (Intermediate Definition)	$2,032	$2,418	$1,889
Mean Paid Amount as % of Mean Charges, Mental Health Diagnosis	72%	71%	72%
N Injured Workers (Unweighted)	2,056	494	1,565
Claims Without Anxiety/Trauma Disorders			
All Medical Bills			
Mean Count of Bills Submitted at 24 Months, Any Diagnosis	11.7	11.2	12.0
Mean Count of Bills Denied at 24 Months, Any Diagnosis	3.2	3.3	3.2
Mean Count of Denied Bills as % of Mean Bill Count, Any Diagnosis	27.4%	29.5%	26.6%
Mean Charges Submitted at 24 Months, Any Diagnosis	$9,540	$9,861	$9,389
Mean Charges on Denied Bills at 24 Months, Any Diagnosis	$2,444	$2,612	$2,367
Mean Charges on Denied Bills as % of Mean Charges	25.6%	26.5%	25.2%
Mean Paid Amount at 24 Months, Any Diagnosis	$3,244	$3,359	$3,193
Mean Paid Amount as % of Mean Charges, Mental Health Diagnosis	34.0%	34.1%	34.0%
N (Unweighted)	113,291	32,098	81,401

NOTES: Authors' calculations, 2008–2019 WCIS. Sample is limited to observations for which there are valid occupation codes; workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of total FROI submissions and has complete medical bill data.

Note that charges must be interpreted with caution and generally should not be assumed to capture either the resource cost of providing care or the price of care—especially in a setting like California workers' compensation, where payments are capped by a fee schedule. Nevertheless, comparing charges on denied bills to total charges may offer some insight into bill denial patterns; particularly, it may provide insight into whether bills with high charges are more likely to be denied.

For first responders as a whole, claims involving anxiety/trauma disorders had an average of 26 medical bills submitted over the first two years of the claim. The average bill count was identical for firefighters and first responders. Consistent with other data on severity and indemnity-benefit receipt, discussed in Chapter 4, these bill counts are more than double the average bill count (11 for firefighters and 12 for peace officers) for claims not involving mental health conditions. Total charges over the first two years of the claim are correspondingly higher for claims involving anxiety/trauma disorders (roughly $28,100 dollars for firefighters and $30,200 for peace officers) than for other claims ($9,900 for firefighters and $9,400 for peace officers). Payments are higher as well ($10,600 for firefighters and $9,500 for peace officers on claims involving anxiety/trauma disorders versus $3,400 for firefighters and $3,200 on other claims).

It is critical, however, to recall that claims involving mental health conditions frequently also involve physical injuries, which means not all the bills included in the statistics reflect mental health care. For this reason, Table 6.2 also reports charges, denials, and payments on bills with mental health diagnoses (anxiety/trauma disorder). These estimates indicate that roughly 90 percent of charges on claims involving anxiety/trauma disorders are for bills that do not involve mental health conditions: for workers whose claims involve anxiety/trauma disorders, mean charges on bills with diagnosis codes for anxiety/trauma disorders were only $3,400 for firefighters and $2,600 for peace officers. This likely reflects the complexity of these cases and the involvement of multiple injuries or health conditions.

Turning to medical bill denial rates, around a quarter of medical bills (27 percent for firefighters and 26 percent for peace officers) are denied on claims involving mental health conditions, a rate that is close to or slightly lower than the proportion of bills denied on other claims (30 percent for firefighters and 29 percent for peace officers). When we examine denial rates weighted by charges, we find similar denial rates (22 percent of charges on denied bills for firefighters whose claims involve mental health conditions and 29 percent for peace officers), and we find that these rates are comparable to the corresponding statistics for claims not involving anxiety/trauma disorders (27 percent of charges on denied bills for firefighters and 25 percent of charges on denied bills for peace officers).

When we examine denial patterns specifically for medical bills with diagnosis codes indicating anxiety/trauma disorders, we actually find a substantially lower share of charges associated with denied bills than for all bills on these claims: the proportion of charges associated with mental health diagnoses that came on denied bills was 17 percent for firefighters and 13 percent for peace officers.

These estimates are not necessarily inconsistent with our interview findings, since they confirmed that medical bill denials for treatment of anxiety/trauma disorders remain commonplace (if less widespread than elsewhere in the workers' compensation system). Also note that the data on charges associated with denied bills tell us nothing about the clinical importance of the care that was denied; the data also do not tell us whether there are systematic denials of certain types of care that are important for treating PTSD.

Summary of Findings

In this chapter, we discussed the stigma of accessing mental health care and its limiting influence on first responders' care-seeking. In particular, first responders themselves noted that needing help for stress or mental health issues was seen as a sign of weakness, and they were clearly concerned about whether others thought they could do their jobs, whether they would lose their jobs, and whether others in the department (including their very close colleagues) would view them negatively. Quantitative estimates show that about 12 percent of first responders

Box 6.1. Answers to Research Questions 7 and 10 Posed by CHSWC

RQ7: To the extent that claims for mental health conditions filed by firefighters (or peace officers) are being denied by employers, is this occurring following prior treatment that was covered by employer-sponsored or other health care coverage, where the treating provider(s) concluded the condition was job-related, or in cases where there was no prior treatment or diagnosis?

***A**: In-depth interviews with firefighters, peace officers, mental health providers, applicants' attorneys, and claims administrators indicated that receipt of a PTSD diagnosis and treatment prior to filing a workers' compensation claim improved workers' chances of having the claim initially accepted, but that denials occurred both in cases with and without prior treatment or a prior PTSD diagnosis. Additionally, these interviews uncovered the fact that receipt of PTSD treatment prior to filing a claim (or after filing, due to delays and denials) was most often not covered by employer-sponsored or other health care coverage but was paid for by first responders themselves. (See also RQ10 below.)*

RQ10*: In the case of denied workers' compensation claims by firefighters and peace officers for mental health conditions, is there evidence that the claimant later sought and obtained care through employer-sponsored or other health care coverage?*

***A:** No. In-depth interviews with peace officers and firefighters did not identify any workers who received mental health care through employer-sponsored insurance. Reasons given for avoiding ESI included confidentiality concerns, the belief that mental health care from culturally competent providers would not be covered by ESI, and the belief that ESI would not pay bills for potentially work-related health conditions.*

surveyed needed mental health support and care during the year. Though the quantitative data has limitations, it supports the findings that stigma is a barrier to accessing care, particularly among peace officers.

All department chiefs noted that their departments offered a range of services and mental health support, including EAP, peer support, critical incident debriefs, and access to 4850 pay (at a minimum). Several departments noted providing additional supports (over and above the aforementioned basic resources), including training specific to PTSD/PTSI and access to culturally competent mental health providers and wellness programs that focus on exercise, diet, mental condition, etc. Departments with the greatest amount of support and resources tended to support first responders participating in intensive treatment, such as PTSD retreats, and provided access to a confidential app for treatment support (for first responders and their families). Most first responders, however, said their departments did not provide sufficient resources to support mental health, even though chiefs felt their departments had the necessary behavioral health supports. First responders discussed the culture of their departments, noting that there was definite stigma surrounding accessing care and mental health treatment in most police and fire departments, despite the PTSD presumption.

Department chiefs acknowledged in most cases that they could improve the culture within their departments and work on more ways to reduce stigma. They felt they had made progress in recent years but that there was still more to be done. Primarily, they mentioned the need to find ways to provide more internal leadership and training support for first responders, such as

actively aligning leaders' messaging in regard to mental health issues. They also spoke about the need to provide first responders with access to culturally competent mental health providers—outside providers whom they could reach out to confidentially or with the blessing of the department.

Barriers to improving the culture surrounding mental health issues included a lack of discussion (or regular discussion) about mental health and trauma across the department (and across all levels of leadership and ranks) and a failure to acknowledge and address the apparent fear of first responders regarding losing their jobs due to mental health concerns. Mental health providers and first responders cited needing more evidence that mental health treatment was effective and that first responders could recover from mental health issues and return to work. Chiefs noted that they were still working on reducing stigma around access to resources but that they themselves and their departments were able recognize trauma in their employees. There was acknowledgment that changing culture and structures takes time and resources.

Another major barrier that was identified in the quantitative data was the cost of care, which is troubling, as the data reflects a period where first responders have near universal coverage; further, there are mental health parity laws in place to make mental health care affordable. This barrier, however, was supported by the qualitative data analysis, with nearly all first responders noting they had to pay for care themselves (whether they sought out treatment before or after filing a claim), with few getting reimbursed for care after the fact (even with applicants' attorneys and settlements involved). The qualitative data indicates that peace officers spent less time in mental health treatment than firefighters (although peace officers may have received more intensive avenues of care), delayed their care by not seeking treatment right away, or simply chose to "gut it out."

Further, we heard that the workers' compensation claims process both delayed and prolonged mental health care and treatment for first responders. In response to research question 7 (see Appendix A), based on the qualitative analysis, we found that claims were denied half of the time after mental health treatment was sought. However, first responders did not seek mental health treatment through employer-sponsored insurance or other health care coverage; they could not use those types of insurance, as the mental health provider could not bill for work-related incidents or issues. Given that many mental health providers also would not work with the workers' compensation system, first responders were left to pay for their mental health care out-of-pocket. Some were able to access funds from the Police Officers Association or international association of firefighters (IAFF) or other avenues, but that was rare.

Half of the first responders we interviewed sought treatment after filing a claim; however, all but one of these were denied, which delayed the start of mental health treatment. Further, mental health professionals tended to avoid starting treatment for individuals with work-related injuries, due to the barriers imposed by workers' compensation. As a result, first responders were again left to pay for treatment out-of-pocket and then rarely got reimbursed. While most applicants' attorneys and many claims administrators said they generally advised first responders to gain

some treatment before filing a claim, so as to substantiate their diagnosis and strengthen their need for the claim, some first responders were unable to access care through this route.

Additionally, several first responders, even with a diagnosis from their treating mental health provider, still needed a QME to confirm or provide a diagnosis before workers' compensation would accept the claim and/or agree to pay for treatment.

We had access to workers' compensation claims without linked data on group health claims, and therefore could not provide quantitative evidence to either support or refute the proposition that first responders seek care through group health insurance if their workers' compensation claims are denied (research question 10). However, the workers we interviewed did not seek mental health care through group health or employer-sponsored insurance when their claims were delayed, as those who accessed care paid for it out-of-pocket.

7. Costs of PTSD Claims and Potential Cost Impacts of SB 542

This chapter looks at the future costs to state and local governments now that SB 542 is in effect as well as the costs associated with retroactive application of the rules of SB 542. We illustrate the possible degree of variability in the estimated costs, due to changes in assumptions about the true incidence rate of PTSD; the impact of SB 542 on claim-filing decisions; and the change in claim denial rates resulting from the presumption. This chapter answers research questions 11 and 12:

- **RQ11:** What might the costs to state and local governments be for each of the next five years now that SB 542 is in effect? Please separate out firefighter and peace officer estimated costs.
- **RQ12:** What would the costs to state and local governments be that are associated with the retroactive application of the rules set forth in SB 542? Please separate out firefighter and peace officer estimated costs.

Before modeling future costs, we report our estimates of the cost of paid benefits on claims involving PTSD during the 12-year period (2008–2019) leading up to enactment of SB 542. These estimates are important inputs into our cost modeling and will likely be of interest to policymakers in their own right.

Paid Benefit Costs for PTSD Claims Prior to SB 542

Table 7.1 summarizes the average paid indemnity and medical benefits for first responder claims involving PTSD with injury dates between 2008 and 2019. All dollar amounts in the table (and in this chapter) are adjusted for inflation, to the price level in 2020, using the Consumer Price Index for All Urban Consumers (CPI-U), with inflation adjustment applied as if all payments were made in the year of injury. Paid amounts in each benefits category are winsorized at the ninety-ninth percentile to reduce the influence of outliers.

Several findings emerge from the table. First, claims involving PTSD are high-cost compared with other groups of claims filed by first responders. For first responders as a whole, the average claim involving PTSD resulted in $63,049 of paid indemnity, medical, and settlements. The average for peace officers was slightly higher ($65,179) than for firefighters ($58,781), but in both occupations, the claims are far more costly than other types of claims filed by these workers. When we consider a slightly larger definition of mental health conditions (anxiety and trauma-related disorders), the average total benefit cost drops by about $4,000 for firefighters and by about $15,000 for peace officers, indicating that claims involving other mental health conditions in these diagnostic groupings are less costly than claims for PTSD.

Table 7.1. Paid Benefit Costs for First Responder Claims, by Involvement of PTSD or Other Health Conditions

	First Responders			Firefighters			Peace Officers		
Claim Initially Denied?	N	Y	Total	N	Y	Total	N	Y	Total
Total Indemnity Costs (Including Nonmedical Settlements)									
PTSD	$51,950	$33,594	$47,209	$42,200	$33,240	$40,089	$57,192	$33,843	$50,830
Anxiety/Trauma Disorders	$43,201	$23,142	$37,399	$40,002	$31,582	$37,989	$44,470	$20,794	$37,161
Cancer	$29,865	$29,591	$29,805	$26,591	$23,862	$26,147	$32,362	$32,042	$32,280
All Presumption Conditions	$19,906	$24,408	$20,430	$19,854	$22,143	$20,057	$19,920	$25,211	$20,606
All Workers' Compensation Claims	$8,922	$13,354	$9,320	$9,744	$12,329	$9,936	$8,563	$13,716	$9,059
Medical (24 Months) + Medical Settlements									
PTSD	$17,644	$10,659	$15,840	$21,264	$10,348	$18,692	$15,697	$10,750	$14,349
Anxiety/Trauma Disorders	$16,300	$8,693	$14,100	$18,306	$12,613	$16,945	$15,465	$7,557	$13,024
Cancer	$16,814	$10,889	$15,517	$19,353	$11,226	$18,033	$14,877	$10,745	$13,815
All Presumption Conditions	$10,326	$8,035	$10,060	$10,701	$9,160	$10,564	$10,140	$7,673	$9,820
All Workers' Compensation Claims	$4,768	$4,641	$4,756	$5,260	$4,659	$5,215	$4,550	$4,631	$4,558
Total Paid Benefits									
PTSD	$69,593	$44,252	$63,049	$63,464	$43,588	$58,781	$72,889	$44,593	$65,179
Anxiety/Trauma Disorders	$59,501	$31,835	$51,499	$58,309	$44,194	$54,934	$59,934	$28,350	$50,185
Cancer	$46,678	$40,480	$45,322	$45,944	$35,088	$44,180	$47,239	$42,787	$46,095
All Presumption Conditions	$30,232	$32,443	$30,489	$30,555	$31,303	$30,622	$30,060	$32,883	$30,426
All Workers' Compensation Claims	$13,690	$17,995	$14,076	$15,004	$16,988	$15,151	$13,113	$18,347	$13,618

NOTES: Average paid indemnity and medical benefits for first responder claims involving PTSD, with injury dates between 2008 and 2019. Dollar amounts are inflated to real 2020 dollars using the CPI-U. Paid medical bill amounts include care provided within two years (24 months) of the earliest service date for care billed to workers' compensation. Totals may not sum due to rounding.

Table 7.1 also compares the average cost of PTSD claims with other conditions that have presumptions for public safety workers. Claims involving cancer, while also high-cost, result in lower paid benefit amounts than claims involving PTSD: claims involving cancer result in total paid benefit amounts of $45,322 across all first responders; average paid amounts for firefighters and peace officers were very close to this overall average. Claims involving all presumption-linked conditions other than PTSD were, on average, lower-cost than both cancer and PTSD claims, with total paid benefit amounts averaging $30,489 for first responders; the averages were also very similar for firefighters and peace officers. In contrast, the average paid benefit amount for all claims filed by first responders was $14,076: $15,151 for firefighters and $13,618 for peace officers.

Claims involving PTSD, in short, cost between four and five times as much as the average workers' compensation claim filed by first responders. This dramatic cost difference needs to be interpreted with caution, however, as we discuss below.

Table 7.1 indicates some other important facts about benefit costs associated with claims involving PTSD. Paid benefits are primarily driven by indemnity benefits rather than by medical care. The average paid indemnity benefits on claims involving PTSD were $47,209 on average for all first responders. Paid indemnity costs were higher for peace officers ($50,830) than for firefighters ($40,089). Paid medical benefits, including settled medical benefits, were $15,840 on claims involving PTSD, on average, for all first responders. Paid medical benefits were higher for firefighters ($18,692) than for peace officers ($14,349).

Note that Table 7.1 includes only medical care provided within two years of the first service date observed in workers' compensation to minimize the potential for right-censoring in more recent injury years. In earlier injury years (2008–2015) for which at least five years of data could be observed, medical benefits paid after two years accounted for 35 percent of the total amount paid. (This calculation allocates settlements to the first two years of the claim.) Late-emerging costs were more important for peace officers (39 percent of all medical spending) than for firefighters (30 percent).

Even if we extrapolated future medical costs for all claims filed in the 2008–2019 period based on these patterns, however, indemnity benefits and settlements for benefits other than medical care would account for the majority of total paid benefits on claims involving PTSD, as indemnity benefits are two to three times higher than medical spending and settlements over the first two years after injury.

Table 7.1 shows that the relative importance of indemnity benefits, however, is not unique to PTSD claims: for the average workers' compensation claim filed by first responders, indemnity benefits are about double the amount of medical benefits and settlements paid in the first two years. Apart from cancer claims, for which medical benefits are higher relative to indemnity benefits, indemnity benefits are by far the more important cost driver for all groupings of health conditions examined here. This is not the case for the workers' compensation system as a whole,

but this pattern may be explained in part by salary continuation benefits provided under section 4850 of the Labor Code, known as 4850 time. A provision meant in part to remedy the relatively low cap on weekly benefits (two-thirds of the state average weekly wage) in comparison with the usual weekly wages of most public safety workers, 4850 pay tops up temporary total disability benefits to provide 100-percent wage replacement to first responders with work-related injuries. For interested readers, we provide more details on the costs associated with specific categories of indemnity benefits in Table C.8.

Table 7.1 contains one last important finding, which is that initial claim denials are associated with much lower amounts of paid benefits. For all first responders, a claim involving PTSD that is initially denied results in an average of $44,252 in paid benefits ($33,594 of indemnity benefits and $10,659 of paid medical benefits). Paid benefits on denied claims were very similar ($44,000 to $45,000) for both firefighters and peace officers, while initially accepted peace officer claims received more in benefits ($72,889) than did initially accepted firefighter claims ($63,464).

The difference in paid benefits between accepted and denied claims was driven by both medical and indemnity benefits. For firefighters, paid medical benefits were about $11,000 higher on accepted PTSD claims than on initially denied PTSD claims; this difference was about $5,000 for peace officers. Indemnity benefits were also higher on accepted claims but with a much larger difference for peace officers (about $23,000 higher) than for firefighters (about $9,000).

When we compare initially denied and accepted claims that do not involve PTSD, we find that the strong association between claim acceptance and higher costs is largely unique to claims involving PTSD. Cancer claims that are initially denied also have lower costs, but we do not see this pattern among presumption conditions taken as a whole or among first responder claims as a whole. In fact, looking at all claims filed by first responders, paid benefit costs on average are higher on initially denied claims. This may appear counterintuitive, but such a pattern could have several explanations. For example, claims administrators might apply greater scrutiny to claims that seem potentially higher-cost, or injured workers with injuries for which work-relatedness is difficult to prove might be reluctant to file claims unless their injuries or disability is relatively severe. We cannot substantiate or distinguish between any of these mechanisms, however, within the scope of the present study.

Nevertheless, the contrast between PTSD claims and other claims filed between first responders is clear and striking: denied claims involving PTSD have much lower benefit payments. If SB 542 does, in fact, reduce the claim denial rate (as we assume it will in our cost modeling below), then the size of this paid benefit difference between denied and accepted claims will have substantial implications for the potential cost of SB 542.

As noted above, these results on costs must be interpreted with caution. One issue is that claims very often involve multiple injuries or health conditions, especially given that first

responders have presumptive coverage of several highly prevalent health conditions (including cancer, heart disease, and back pain). We saw in Chapter 4 that claims involving PTSD very frequently involve multiple injuries or health conditions: the incremental cost of adding PTSD to a workers' compensation claim that might have been filed for other injuries could not reliably be estimated within the scope of this study, although such an analysis may be more feasible once retrospective cost data from claims filed after SB 542 will make it more feasible to study this question. It seems very plausible that claims involving PTSD may be more likely to involve other injuries (or more severe physical injuries) than other claims filed by first responders.

To examine whether physical health injuries and conditions other than PTSD drive the high estimated costs for claims involving PTSD, we estimated costs for the subset of PTSD claims for which the nature of the injury—as reported on the FROI when the claim was initially filed—involved only mental health. That is, we excluded claims that were reported as involving physical injuries only, physical and mental injuries together, or cumulative injuries not otherwise classified.

Contrary to our expectations, we found that costs for PTSD claims initially reported as being for mental health only were nearly as high as costs estimated for all claims involving PTSD. For all first responders, PTSD claims that involved only mental health cost an average of $56,850, compared with $63,049 for all PTSD claims. Costs in the subsample of mental-health-only claims were slightly higher for firefighters ($62,303, compared with $58,781 for all PTSD claims) but lower for peace officers ($53,824, compared with $65,179). These estimates are reported in Table C.9.

For our cost analysis, we worked with the average costs reported in Table 7.1. In Table 7.10, we also report costs for an intermediate scenario using cost estimates from mental-health-only claims as a sensitivity analysis. These costs are similar to those estimated using the full sample of PTSD claims, however. Attributing all costs on the claim to PTSD may tend to overstate the cost of PTSD to the workers' compensation system, meaning that our cost estimates are more likely to represent an upper bound on the benefit costs that might result from SB 542.

Overview of SB 542 Cost Modeling

Since we were not able to precisely estimate the costs that state and local governments will face, we instead chose a set of scenarios based on possible changes in behavior by the actors most affected by SB 542: first responders with PTSD and the workers' compensation system. These scenarios provide a range of potential costs that we believe encompass what will likely happen. For each scenario, we based our cost calculations on a straightforward formula:

$$\text{Total Costs} = \text{Number of Claims} \times \text{Cost per Claim},$$

where

Number of Claims = Number of First Responders × PTSD Incidence Rate × Probability of Seeking Care for Those with PTSD × Probability of Filing a Workers' Compensation Claim for Those Seeking Care,

and

Cost per Claim = Probability of Denial × Cost per Denied Claim + Probability of Acceptance × Cost per Accepted Claim.

We describe each of these components in the sections below.

We focused on how SB 542 might influence how many claims are filed as well as the average cost per claim over the 2020–2024 period. We used the same framework and assumptions to analyze costs that would result from applying the SB 542 presumption retroactively to injury dates between 2017 and 2019. We combined estimates from our analyses of the CHIS and the WCIS with estimates from relevant literature to define a set of scenarios that represent possible changes in workers' compensation filing by first responders as well as possible changes in how the workers' compensation system responds. We used these scenarios to frame the range of potential changes from a lower bound to an upper bound. We then calculated the number of claims filed and the total costs to state and local governments for each scenario.

Population at Risk

We used 2019 estimates from the U.S. Bureau of Labor Statistics' (BLS) Occupational Employment Statistics (OES) program to determine the number of firefighters and peace officers employed by state and local government in California. OES is an employer survey that produces detailed estimates of occupational employment by industry, allowing us to derive employment levels separately for state and local government. These estimates are reported in Table 7.2.

Potential Changes in Number of Workers' Compensation Claims Filed

We assume that the incidence of PTSD will not change with the adoption of SB 542, but we believe that the likelihood of first responders filing workers' compensation claims could change. We model the decision to file a workers' compensation claim involving PTSD as the outcome of two components: whether workers seek treatment for PTSD (from any source) and, if so, whether a workers' compensation claim is filed. SB 542 may lead to an increase in the number of first responders who seek treatment for PTSD through a decrease in stigma (if recognition through workers' compensation decreases the negative association with PTSD) or through an increase in access to treatment (since the workers' compensation system now offers an alternative for paying for treatment or recovering compensation). Finally, first responders with PTSD who would seek treatment regardless, covering the costs through other means, may now cover costs through workers' compensation.

Table 7.2. California 2020 Peace Officer and Firefighter Employment in State and Local Government, BLS OES Estimates

Occupation and Level of Government	2020 Employment
Peace Officers	
State	8,953
Local	68,897
Total (State + Local)	77,850
Firefighters	
State	4,380
Local	29,550
Total (State + Local)	33,930

SOURCE: OES estimates used were available from U.S. Bureau of Labor Statistics, undated (a), and U.S. Bureau of Labor Statistics, undated (b).

NOTES: Estimates derived from 2020 BLS OES estimates for California. Firefighter employment defined as total California employment for first-line supervisors of firefighting and prevention workers (SOC code 33-1021) and firefighters (SOC code 33-2011). Peace officer employment defined as total California employment of first-line supervisors of police and detectives (SOC code 33-1012), police and sheriff's patrol officers (SOC code 33-3051), and transit and railroad police (SOC code 33-3052). State government employment (NAICS code 9992) and local government employment (NAICS 9993) within occupations were summed to derive table counts: 570 peace officers employed by elementary and secondary schools (NAICS 6111) or junior colleges (NAICS 6112) were allocated to local government, and 960 peace officers employed by colleges, universities, and professional schools (NAICS 6113) were allocated to state government.

Annual PTSD Incidence

As discussed above (Chapters 2 and 3), we were unable to directly estimate the occupation-specific incidence of PTSD and instead estimated the prevalence of serious and moderate mental distress for firefighters and peace officers. We draw on these prevalence estimates to inform assumptions about the true *incidence* rate of new PTSD cases among first responders, defined as the probability that a first responder who is currently not suffering from PTSD will develop new-onset PTSD over a one-year period. There were no direct estimates of PTSD incidence among first responders in California during our study period, and (as discussed in Chapter 3) prevalence estimates from the literature vary widely. There are, however, incidence estimates for PTSD and other mental health conditions in other populations that we consider relevant to our population.

We used two incidence estimates from the literature that are consistent with the range steady-state prevalence estimates that we estimated from the CHIS (Table 7.3).[1] Grant and colleagues estimated the incidence of general anxiety disorders at 1.6 percent (Grant et al., 2009). General anxiety is not as severe as PTSD, but an annual incidence of 1.6 percent yields an estimated prevalence that is equal to the estimated prevalence of serious psychological distress among first responders. Tanielian and colleagues provided estimates of PTSD incidence among active

[1] We created a simulation model that takes incidence, treatment-seeking, and recovery estimates and generates annual prevalence in each year. We then calculated the change in estimated prevalence in each year. After ten years, the rate of change dropped to zero, and the resulting prevalence was the estimated population prevalence.

service members during the Iraq and Afghanistan wars of 5 to 15 percent (Tanielian and Jaycox, 2008). First responders probably do not have the same exposure to intense trauma as front-line military personnel, however; therefore, an annual incidence estimate of 5 percent—at the lower end of the range of estimates from the Iraq and Afghanistan wars—yields an estimated prevalence that is equal to the estimated prevalence of moderate or serious psychological distress among first responders. Finally, to derive incidence rates for firefighters and peace officers, we assigned the assumed incidence rate in each scenario to peace officers and assigned firefighters an incidence rate that was 2.25 times higher: This ratio was chosen to reflect the ratio of moderate or serious mental distress prevalence for firefighters to the prevalence for peace officers, as estimated in Chapter 3.

Table 7.3. PTSD Incidence Rate Assumptions

First Responders	Low-Incidence Scenario	High-Incidence Scenario
Peace Officers	1.6%	5%
Firefighters	3.6%	11.5%

NOTE: Estimated annual rates for generalized anxiety disorders (lower bound) and PTSD among active service members (upper bound) adjusted to reflect the relative prevalence of moderate or serious psychological distress.

Treatment-Seeking Among First Responders

In Chapter 6, we estimated (using the CHIS) that 41 percent of peace officers and 56 percent of firefighters who believe they need help for behavioral health disorders seek treatment. We assume that SB 542 will not change the number of first responders with PTSD who believe they need help, but the number of those who seek help for PTSD by filing workers' compensation claims may change. In general, the most common reasons for not seeking mental health care are the perception that treatment is ineffective and the desire to deal with it alone (Kessler et al., 2001). Additional reasons are a perceived lack of access and stigma (Henderson, Evans-Lacko, and Thornicroft, 2013; Kessler et al., 2001; Jones, Agud, and McSweeney, 2020), both of which may be reduced via SB 542. Among first responders in California, 83 percent of peace officers who did not seek treatment for behavioral health said that stigma was the reason, and 55 percent said that access was the reason. Among firefighters who did not seek treatment, 4 percent said that stigma was the reason, while 20 percent cited lack of access. As we discuss below, these estimates are used in our analysis to determine the increase in care-seeking (and workers' compensation claim filing) that would result from elimination or reduction of cost- and stigma-related barriers.

Workers' Compensation Filing Scenarios

We considered three potential changes in how peace officers and firefighters with PTSD might file workers' compensation claims. If SB 542 reduces barriers to seeking treatment, then first responders who would not have previously sought treatment would now seek care. We

consider three alternative assumptions about the proportion of workers with PTSD who will seek treatment with SB 542 in place. In scenario 1 ("elimination of barriers"), we assume that all first responders who would not seek treatment because of their most significant barriers will now seek care and file a workers' compensation claim. This means that all peace officers who normally would not seek treatment because of stigma and all firefighters who would not seek treatment because of access would now seek care and file a workers' compensation claim. In a scenario 2 ("partial elimination of barriers"), we assume that half of the first responders from scenario 1 will seek treatment. If first responders with PTSD who would normally seek treatment (i.e., ignore barriers) and cover that treatment through other means would now choose to cover it via workers' compensation, then we would see an increase in workers' compensation claims for PTSD. In scenario 3 ("all who seek care"), we assume that that all who would seek treatment under the status quo will now file a workers' compensation claim. This seems highly unlikely but can be viewed as an upper bound on the increase in claim filing that may result from SB 542. Table 7.4 includes the estimated percentages of peace officers and firefighters who will seek care under each scenario.

Table 7.4. Workers' Compensation Filing Scenarios

	Proportion of Workers with Unmet Need for Care Under the Status Quo Who File a Workers' Compensation Claim Due to SB 542	
Scenario	**Peace Officers**	**Firefighters**
Scenario 1: Elimination of Barriers[a]	49.2%	8.9%
Scenario 2: Partial Elimination of Barriers[b]	24.6%	4.4%
Scenario 3: All Who Seek Care[c]	100%	100%

[a] Assumes that all who would not seek care because of stigma (peace officers) or access (firefighters) would seek care and file workers' compensation claims.

[b] Assumes that half of those who would not seek care because of stigma (peace officers) or access (firefighters) would seek care and file workers' compensation claims.

[c] Assumes that all who would normally seek care will file workers' compensation claims.

Potential Changes in Workers' Compensation System in Response to Claims

In Chapter 4 we described the process and frequency of workers' compensation claim denials for PTSD and other presumption conditions. We defined three scenarios of workers' compensation responses, covering a range of potential changes in the initial denial rates of claims for PTSD. Table 7.5 summarizes the denial rates for each scenario. Scenario A assumes that there will be no change in the initial denial rates, so we used the rates described above (Chapter 4). Scenario B assumes that the denial rates will drop to the current average among other presumption conditions, and scenario C assumes that the rate will be halfway between the

current rate and the average for other presumptions. Based on our estimates for claims involving high-cost conditions like cancer and heart disease, these higher denial rates would imply smaller increases in the average cost per claim.

Table 7.5. Workers' Compensation Denial Rate Scenarios

Scenario	Initial Denial Rate for PTSD Claims	
	Peace Officers	Firefighters
Scenario A: No Change	34%	27%
Scenario B: Average Denial Rate for Other Presumptions	13%	9%
Scenario C: Midway Between Current Denial Rate and Average Presumption Denial Rate	23%	18%

NOTE: Estimated using WCIS claims data.

Retroactive Application of SB 542

As originally introduced, SB 542 included a provision that would have allowed first responders to file claims for PTSD with injury dates (either a diagnosis date or the date of the last injurious exposure) between 2017 and 2019. The draft legislation would have also allowed workers who had denied PTSD claims for these injury dates to file new claims, and it would have applied the presumption to workers with these injury dates who filed claims that were still being adjudicated.

Although this provision was removed from the legislation prior to enactment, CHSWC and Assemblymember Daly asked us to estimate the costs associated with retroactive application of the PTSD presumption. We therefore modeled a scenario based on the retroactivity provision as originally proposed in the draft of SB 542.

To estimate the potential costs associated with this retroactive filing, we assumed that all fully denied claims in the 2017–2019 period would be refiled. We then explored three scenarios for additional claims that were similar to the three scenarios above: all first responders with a PTSD onset in the 2017–2019 period who did not seek treatment because of stigma or access will now file a retroactive claim (scenario 1), half of the same population will file (scenario 2), and all who received treatment in the 2017–2019 period but did not file a workers' compensation claim will now file a workers' compensation claim (scenario 3). Finally, we assumed that only medical costs for claims with a PTSD diagnosis would be reimbursed retroactively. Paid disability benefits on PTSD claims are predominantly for temporary disability, and we assume that workers with PTSD from incidents in the 2017–2019 period would not experience total disability at the time when they might file or refile claims for these incidents. However, they might still seek reimbursement for PTSD care that was not covered by workers' compensation at the time.

Workers' Compensation Claim Payment Estimates

As we describe in Chapter 4, there are three components for workers' compensation claim payments: medical costs, indemnity benefits, and other settlements. Table 7.6 summarizes the current average payments per claim filed by initial denial status. Table 7.1 summarizes payments over the first two years of a claim and shows the relative payments for medical costs versus indemnity benefits and settlements. Table 7.6 shows the average total payments for the lifetime of a claim (up to five years, based on analysis of workers' compensation claims data). There are two sets of average payments; the first set is for all claims with any PTSD diagnosis (including claims with other conditions present), and the second set is for claims that have only mental health diagnoses (and no other conditions present). Comparing the totals in Tables 7.1 and 7.6, we observed that most of the total payments are included in the first two years of the claim. We used the estimates from Table 7.6 to calculate the costs associated with each of the scenarios described above, applying the totals from Table 7.1 to the first two years and dividing the remainder over years three to five to account for the relative difference in payments over the life of the claim. The average totals in Table 7.6 reflect the average payment per claim under the status quo denial-rate scenario. To calculate the average payments under the other scenarios, we apply the average payments for each component (medical and indemnity plus settlements) to the number of claims that are estimated to be initially denied and accepted.

Table 7.6. Average Total Payments per Claim

First Responders	Denied?	Total[a]
All Claims with PTSD Diagnoses[b]		
Peace Officers	Yes	$79,821
	No	$130,471
Firefighters	Yes	$78,023
	No	$113,601
Claims with Only Mental Health Diagnoses[c]		
Peace Officers	Yes	$68,234
	No	$113,839
Firefighters	Yes	$111,349
	No	$124,868

NOTE: Estimated using WCIS claims data for PTSD claims filed in the 2008–2015 time period. Dollar amounts are inflated to real 2020 dollars using the CPI-U.

[a] Includes all medical, indemnity, and settlement payments over the lifetime of a claim.

[b] All workers' compensation claims that have a diagnosis of PTSD. Includes payments associated with other conditions present on the claims.

[c] All claims that have only mental health diagnoses. No other conditions are present on the claims.

Workers' Compensation Claims Filed per Year

We summarize our estimated number of workers' compensation claims in each year by type of first responder and by level of government (state or local). We provide separate estimates for state and local government because of differences in budget impacts. We include estimates for each of the filing scenarios described in Table 7.4: (1) all who would not seek care because of stigma (peace officers) or access (firefighters) would seek care and file workers' compensation claims; (2) half of those who would not seek care because of stigma (peace officers) or access (firefighters) would seek care and file workers' compensation claims; and (3) all who would normally seek care will file workers' compensation claims.

Status Quo

Table 7.7 summarizes the number of first responders who would seek treatment for PTSD each year, and the number who would file workers' compensation claims if there were no changes in filing behavior or claim outcomes due to SB 542. The number of first responders acquiring PTSD each year changes under our two incidence rates, but the likelihood of seeking treatment remains the same. Based on our estimates from the CHIS, 41 percent of peace officers and 56 percent of firefighters who believe they need help for behavioral disorders seek treatment. The number filing workers' compensation claims does not change for either incidence rate under the status quo. We calculated the average number of workers' compensation claims filed each year

Table 7.7. Number of First Responders Seeking Treatment and Filing Workers' Compensation Claims Annually If Nothing Changes

First Responders		# With PTSD	# Seeking Treatment[a]	# Filing Workers' Compensation Claim[b]
Low Incidence Rate				
Peace Officers	State	141	57	20
(1.6% Incidence Rate)	Local	1,088	443	151
Firefighters	State	159	88	10
(3.6% Incidence Rate)	Local	1,075	600	72
High Incidence Rate				
Peace Officers	State	447	182	20
(5% Incidence Rate)	Local	3,444	1,405	151
Firefighters	State	505	282	10
(11.5% Incidence Rate)	Local	3,407	1,904	72

[a] Based on estimates from CHIS. Peace officers: 41%. Firefighters: 56%.

[b] Average number of claims filed statewide in the 2016–2019 time period.

during the 2013–2019 period by peace officers and firefighters in the WCIS. We were unable to determine whether the filings are for state or local first responders, so we assume their filing rates are equal and assign the number of filing based on the relative size of the state and local workforces within each occupation, as described earlier in Table 7.2.

First Responder Filing Scenarios

Table 7.8 summarizes the number of claims filed under each of the three scenarios described above. If we focus on an intermediate scenario—where the yearly PTSD incidence rate among first responders is similar to the impact of active duty in a war zone (a high incidence rate), where there is a partial reduction in the barriers to seeking care for PTSD, and where the denial rate is between the current PTSD rate and the average rate for other presumptions—then we estimate that peace officers will file 5,715 workers' compensation claims over the next five years (compared with 855 if there is no change in the filing rate), and firefighters will file 1,385 (compared with 410 if there is no change in the filing rate). The range of total claims filed from 2020 to 2024 for all of our presumption scenarios is from 2,000 to 10,000 for peace officers and from 710 to 11,000 for firefighters. In other words, claims volumes for firefighters could increase by a factor ranging from 2 to 27, while peace officer claims might increase by a factor ranging from 2 to 12.

Total Workers' Compensation Payments 2020–2024

Table 7.9 summarizes the total estimated payments under each of the claim-filing and denial rate scenarios as well as our estimate of payments if there are no changes (status quo). In the intermediate scenario, we estimate the total spending will be $473 million for peace officers and $103 million for firefighters, compared with $68 million for peace officers and $30 million for firefighters if there is no change. The range of total spending on medical costs, indemnity benefits, and settlements for the 2020–2024 period from all of our scenarios is $189 million to $896 million for peace officers and $52 million to $840 million for firefighters.

To illustrate the pattern of payments from 2020 to 2024, Figures 7.1 and 7.2 compare the cost of benefits that might be paid between the status quo and high-incidence-rate scenario, a partial elimination of barriers, and a denial rate halfway between the current denial rate and the average rate for other presumption conditions. Figure 7.1 shows projected paid benefits for peace officer claims in state and local governments with injury dates in 2020 and later in each year from 2020 through 2024. Under the status quo, we estimate that spending for claims by peace officers filed in 2020 will be $7 million 2020, $4 million in 2021, and $3 million in each year of the 2022–2024 period. Under the intermediate scenario, we estimate that spending for claims filed by peace officers in 2020 will be $49 million in 2020, $27 million in 2021, and $20 million in each year from 2022 to 2024. The stacked bars in the figure illustrate how costs each year include spending for newly filed claims as well as continued benefit payments for claims filed in prior years.

Table 7.8. Annual Workers' Compensation Claims Filed for Each Scenario

		Elimination of Barriers[a]		Partial Elimination of Barriers[b]		All Who Seek Care[c]	
		# Seeking Treatment	WC Claims	# Seeking Treatment	WC Claims	# Seeking Treatment	WC Claims
Low Incidence Rate (1.6%)							
Peace Officers	State	126	89	92	55	57	57
(1.6% Incidence Rate)	Local	978	684	715	423	443	443
Firefighters	State	102	24	95	17	88	88
(3.6% Incidence Rate)	Local	696	168	653	125	600	600
High Incidence Rate (5%)							
Peace Officers	State	402	239	292	131	182	182
(5% Incidence Rate)	Local	3,099	1,838	2,252	1,012	1,405	1,405
Firefighters	State	327	55	304	35	282	282
(11.5% Incidence Rate)	Local	2,207	378	2,056	242	1,904	1,904

NOTES: WC = workers' compensation. The number seeking treatment under each scenario is calculated by applying the percent from Table 7.4 to the number with PTSD in Table 7.7 and adding the result to the number seeking treatment from Table 7.7. The number of workers' compensation claims under each scenario is calculated by adding the same result to the number of workers' compensation claims filed from Table 7.7. Differences are due to rounding. For example, for the first row (low incidence, state peace officers), multiply 141 by 49 percent to get 69. Add 69 to 57 to get the number seeking treatment, and add 69 to 20 to get the number of claims filed.

[a] Assumes that all who would not seek care because of stigma (peace officers) or access (firefighters) would seek care and file workers' compensation claims.

[b] Assumes that half of those who would not seek care because of stigma (peace officers) or access (firefighters) would seek care and file workers' compensation claims.

[c] Assumes that all who would normally seek care will file workers' compensation claims.

Table 7.9. Total Workers' Compensation Payments in 2020–2024 Under Each Scenario

First Responders		Claim-Filing Scenario	No Change in Denial Rate (Scenario A)	Midway Between Current Denial Rate and Average Presumption Denial Rate (Scenario C)	Average Denial Rate for Other Presumptions (Scenario B)
Low Incidence Rate					
Peace Officers	State	All who seek care[a]	$22,534,228	$23,591,938	$24,649,648
(1.6% Incidence Rate)		Elimination of barriers[b]	$35,126,261	$36,889,111	$38,475,676
		Partial elimination of barriers[c]	$21,802,315	$22,860,025	$23,741,450
		Status quo	$8,024,270	NA	NA
	Local	All who seek care[a]	$174,723,107	$183,361,072	$191,117,612
		Elimination of barriers[b]	$269,705,596	$282,926,971	$295,090,636
		Partial elimination of barriers[c]	$166,875,122	$174,984,232	$182,564,487

First Responders		Claim-Filing Scenario	No Change in Denial Rate (Scenario A)	Midway Between Current Denial Rate and Average Presumption Denial Rate (Scenario C)	Average Denial Rate for Other Presumptions (Scenario B)
		Status quo	$59,578,414	NA	NA
Firefighters	State	All who seek care[a]	$31,945,572	$32,936,196	$33,926,820
(3.6% Incidence Rate)		Elimination of barriers[b]	$8,746,200	$8,993,856	$9,241,512
		Partial elimination of barriers[c]	$6,226,182	$6,350,010	$8,993,856
		Status quo	$3,706,164	NA	NA
	Local	All who seek care[a]	$217,169,064	$223,855,776	$230,542,488
		Elimination of barriers[b]	$60,851,916	$62,709,336	$64,566,756
		Partial elimination of barriers[c]	$45,336,426	$46,698,534	$48,060,642
		Status quo	$26,114,772	NA	NA
High Incidence Rate					
Peace Officers	State	All who seek care[a]	$71,892,633	$75,418,333	$78,591,463
(5% Incidence Rate)		Elimination of barriers[b]	$94,250,576	$99,010,271	$103,064,826
		Partial elimination of barriers[c]	$51,730,429	**$54,198,419**	$56,490,124
		Status quo	$8,024,270	NA	NA
	Local	All who seek care[a]	$553,921,150	$581,069,040	$605,925,225
		Elimination of barriers[b]	$724,632,122	$760,241,692	$792,678,132
		Partial elimination of barriers[c]	$398,906,148	**$418,650,068**	$436,454,853
		Status quo	$59,578,414	NA	NA
Firefighters	State	All who seek care[a]	$102,086,796	$105,306,324	$108,402,024
(11.5% Incidence Rate)		Elimination of barriers[b]	$20,012,418	$20,631,558	$21,250,698
		Partial elimination of barriers[c]	$12,723,918	**$13,095,402**	$13,466,886
		Status quo	$3,706,164	NA	NA
	Local	All who seek care[a]	$689,159,736	$710,458,152	$731,632,740
		Elimination of barriers[b]	$136,823,940	$141,034,092	$145,244,244
		Partial elimination of barriers[c]	$87,633,624	**$90,357,840**	$93,082,056
		Status quo	$26,114,772	NA	NA

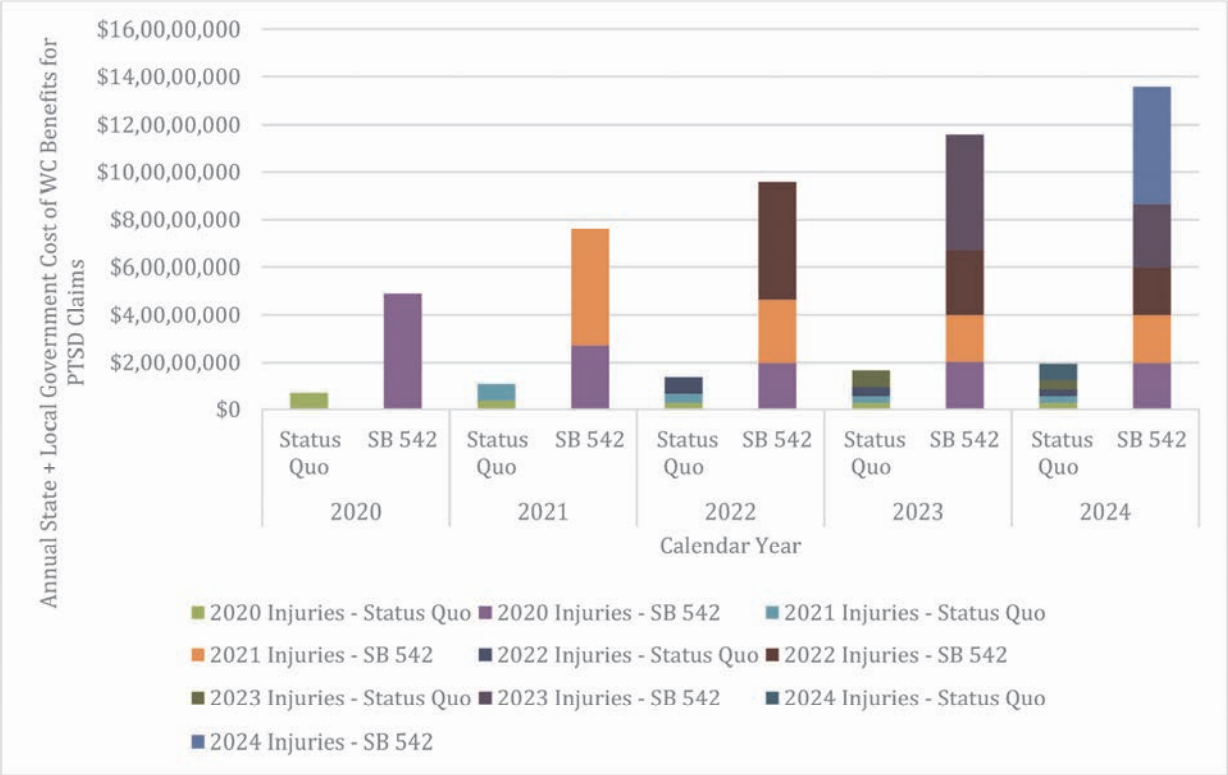
NOTES: Boldface numbers indicate our central scenario (intermediate behavioral assumptions) under each incidence-rate assumption.

[a] Assumes that all who would normally seek care will file workers' compensation claims.

[b] Assumes that all who would not seek care because of stigma (peace officers) or access (firefighters) would seek care and file workers' compensation claims.

[c] Assumes that half of those who would not seek care because of stigma (peace officers) or access (firefighters) would seek care and file workers' compensation claims.

Figure 7.1. Annual Spending in 2020–2024 for Peace Officer PTSD Claims: SB 542 High-Incidence Scenario Versus Pre-SB 542 Status Quo



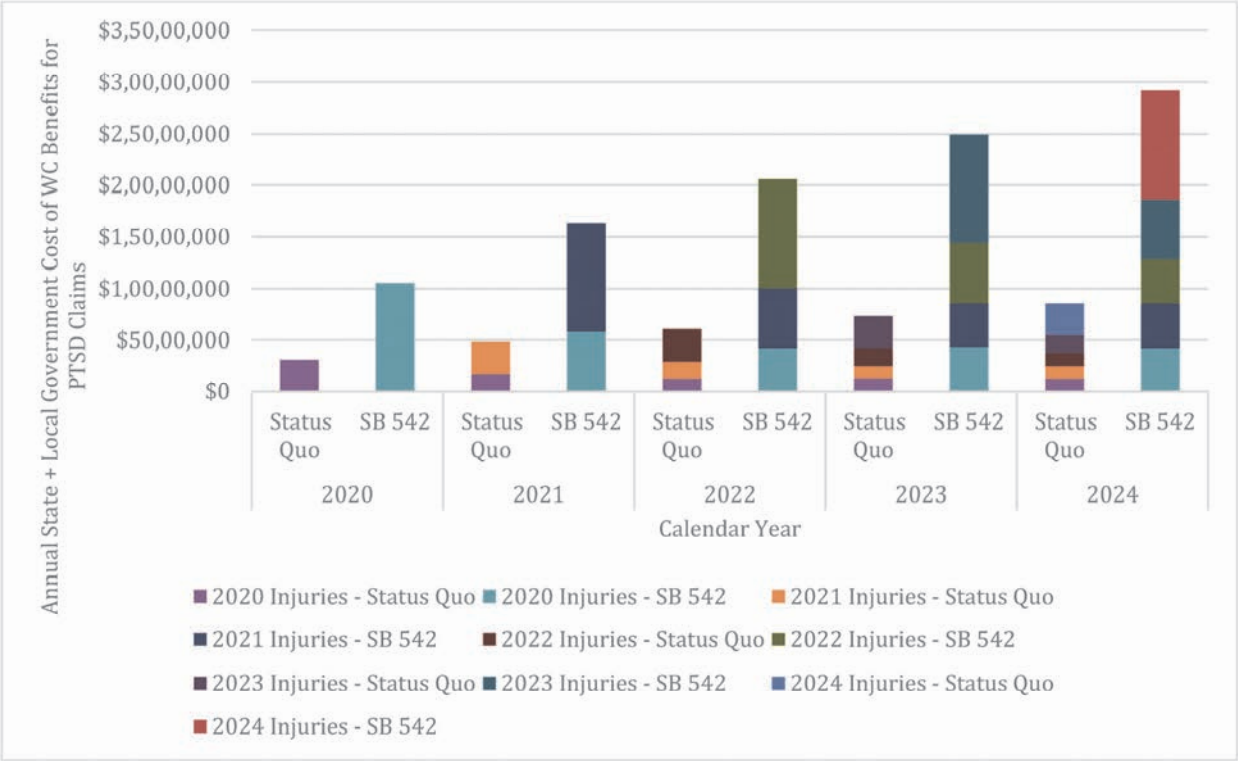
NOTES: Estimated cost of benefits paid by state and local government on peace officer workers' compensation claims for PTSD, by injury cohort (i.e., year claim is filed) and calendar year (i.e., year benefits are paid). Status Quo = scenarios without SB 542 presumption. SB 542 = scenarios with high incidence rates (a 5-percent annual incidence for peace officers) and intermediate behavioral assumptions (a partial reduction of barriers and partial reduction in denial rates).

Figure 7.2 provides similar estimates for firefighters. Under the status quo, we estimate that spending for claims filed by firefighters in 2020 will be $3 million in 2020, $2 million in 2021, and $1 million in each year from 2022 to 2024 (Figure 7.3). Under the intermediate scenario, we estimate spending for claims by firefighters filed in 2020 will be $11 million in 2020, $6 million in 2021, and $4 million in each year from 2022 to 2024 (Figure 7.4).

Workers' Compensation Payments Under Lower Cost Assumption

Table 7.10 summarizes the total spending on workers' compensation claims from 2020 to 2024. Total spending is based on the average costs of claims reporting mental health as the nature of the injury at the time the claim was initially filed (Table 7.6). As discussed above, we estimated costs using this subset of PTSD claims to examine whether the high costs of PTSD claims were driven primarily by the presence of multiple injuries, including physical injuries.

Figure 7.2. Annual Spending in 2020–2024 for Firefighter PTSD Claims: SB 542 High-Incidence Scenario Versus Pre-SB 542 Status Quo



NOTES: Estimated cost of benefits paid by state and local government on firefighter workers' compensation claims for PTSD, by injury cohort (i.e., year claim is filed) and calendar year (i.e., year benefits are paid). Status Quo = scenarios without SB 542 presumption. SB 542 = scenarios with high incidence rates (an 11.6 percent annual incidence for firefighters) and intermediate behavioral assumptions (a partial reduction of barriers and partial reduction in denial rates).

Table 7.10. Summary of Total Workers' Compensation Payments in 2020–2024 Under High-Incidence Intermediate Cost Scenario, Using Cost Estimates from Mental-Health-Only Claims

		Source of Cost Estimates		
First Responders		**PTSD Mental Health-Only Claims**	**All PTSD Claims**	**Status Quo**
Peace Officers	State	$47,135,346	$54,198,419	$8,024,270
	Local	$364,090,776	$418,650,068	$59,578,414
	State + Local	$411,226,122	$472,848,487	$67,602,684
Firefighters	State	$14,926,525	$13,095,402	$3,706,164
	Local	$103,135,019	$90,357,840	$26,114,772
	State + Local	$118,061,544	$103,453,242	$29,820,936

NOTE: Projected total costs to state and local governments of benefits for first responder PTSD claims in the 2020–2024 timeframe.

The table reports costs under a scenario with

- a high incidence rate
- a partial elimination of barriers
- a denial rate halfway between the current denial rate and the average rate for other presumption conditions and our estimate of the costs with no changes (status quo).

Workers' Compensation Payments for Retroactive Application of SB 542 2017–2019

Table 7.11 summarizes the total estimated payments under each of the retroactive claim-filing scenarios. If we assume a high incidence rate, where there is a reduction in barriers to treatment and the denial rate for retrospective workers' compensation is between the current PTSD rate and the average rate for the other presumptions, then we estimate that total costs will be $66,000,000 for peace officers and $13,000,000 for firefighters. The range of total spending on medical costs for retroactive claims in the 2017–2019 period from all scenarios is $1,600,000 to $126,100,000 for peace officers and $650,000 to $125,600,000 for firefighters.

Summary of Findings

We found that claims involving PTSD are costly in comparison with the average workers' compensation claim. On average, paid benefits and settlements on first responders' PTSD claims totaled $63,049. In comparison, the average cost of paid benefits for all first responder workers' compensation claims was $14,076. We note that other presumption conditions, many of which are far more prevalent than PTSD, are also more costly (averaging paid benefits of $20,430) than the average first responder workers' compensation claim; claims involving cancer had average paid benefits of $29,805.

When we compared paid benefits on denied claims with those on accepted claims (based on claim status after the initial investigation), we also found that denied PTSD claims had substantially lower costs than accepted claims: first responder mental health claims cost an average of $44,252 if initially denied, compared with $69,593 if not initially denied. This pattern of sharply higher costs on accepted claims was unique to first responder claims with PTSD diagnoses. We were not able to determine what explains this pattern, but it had major implications for our cost analysis because the incremental cost associated with accepting denied PTSD claims was assumed to be fairly large. For reasons discussed in Chapter 7, we think these cost differences are likely to overstate how a change in denial rates can affect benefits costs, which would also tend to make our estimates an upper bound of the likely expense to state and local governments.

To analyze the costs associated with SB 542, we assumed that the presumption would operate by changing two key determinants of workers' compensation expenses: the probability that first responders diagnosed with PTSD file claims and the probability that PTSD claims are initially denied. Changes in claim-filing rates were assumed to derive from a reduction in stigma

Table 7.11. Total Retroactive Workers' Compensation Payments in 2017–2019 Under Each Scenario

First Responders		Claim-Filing Scenario	Estimated Total Payments in 2017–2019
Low Incidence Rate			
Peace Officers	State	Elimination of barriers[a]	$5,381,667
(1.6% Incidence Rate)		Partial elimination of barriers[b]	$3,388,457
		All who seek care[c]	$3,862,817
	Local	Elimination of barriers[a]	$36,268,641
		Partial elimination of barriers[b]	$19,154,868
		All who seek care[c]	$23,189,173
Firefighters	State	Elimination of barriers[a]	$1,350,013
(3.6% Incidence Rate)		Partial elimination of barriers[b]	$938,940
		All who seek care[c]	$5,224,861
	Local	Elimination of barriers[a]	$6,163,801
		Partial elimination of barriers[b]	$3,638,966
		All who seek care[c]	$32,406,047
High Incidence Rate			
Peace Officers	State	Elimination of barriers[a]	$14,199,676
(5% Incidence Rate)		Partial elimination of barriers[b]	$7,897,122
		All who seek care[c]	$11,134,143
	Local	Elimination of barriers[a]	$111,863,675
		Partial elimination of barriers[b]	$57,711,810
		All who seek care[c]	$86,131,214
Firefighters	State	Elimination of barriers[a]	$3,169,496
(11.5% Incidence Rate)		Partial elimination of barriers[b]	$1,995,821
		All who seek care[c]	$16,613,523
	Local	Elimination of barriers[a]	$18,492,550
		Partial elimination of barriers[b]	$10,508,119
		All who seek care[c]	$108,959,479

[a] Assumes that all who would not seek care because of stigma (peace officers) or access (firefighters) would seek care and file workers' compensation claims.

[b] Assumes that half of those who would not seek care because of stigma (peace officers) or access (firefighters) would seek care and file workers' compensation claims.

[c] Assumes that all who would normally seek care will file workers' compensation claims.

(including reductions in stigma due to a lower probability of claims denial) and related barriers to care-seeking among first responders with new-onset PTSD. Changes in denial rates were derived by lowering denial rates to approach or equal the average observed for other presumption conditions. Other factors, including the incidence of PTSD among first responders and the benefit costs associated with approved and denied claims, were assumed to be unaffected by SB 542. These assumptions are strong, but we lacked sufficient evidence to support any specific alternative assumptions.

Box 7.1. Answers to Research Questions 11 and 12 Posed by the CHSWC

RQ11: What might the costs to state and local governments be for each of the next five years, now that SB 542 is in effect? Please separate out firefighter and peace officer estimated costs.

A: *Anticipated costs to state and local governments are highly indefinite, due to the uncertainty about the true incidence rate of PTSD, the impact of SB 542 on stigma and claim-filing behavior, and the impact of SB 542 on claim denial rates. In an intermediate scenario—assuming that annual PTSD incidence is comparable to that observed for active-duty military deployed to Iraq and Afghanistan, that SB 542 will reduce stigma and access-related barriers to seeking PTSD treatment by half, and that PTSD claim denial rates will be halfway between the pre-SB 542 status quo and the average for all presumption conditions—state and local governments collectively might expect to pay an average of $95 million per year for peace officer claims involving PTSD and $21 million per year for firefighter claims involving PTSD. Under the pre-SB 542 status quo, we estimate that paid amounts would have averaged $14 million per year for peace officer claims and $6 million per year for firefighter claims. With SB 542 in place, paid amounts for workers injured in 2020 or later will grow rom $49 million in 2020 to $136 million in 2024 for peace officers, and from $11 million in 2020 to $29 million in 2024 for firefighters; most costs will be paid by local governments, which employ 89 percent of nonfederal peace officers and 87 percent of nonfederal firefighters in California. The range of uncertainty is very large, however: Over the 2020–2024 period, plausible assumptions about incidence rates and behavioral responses could result in average yearly costs to state and local governments that range from $38 million to $179 million for peace officers and from $10 million to $168 million for firefighters.*

RQ12: What would the cost be to state and local government to retroactively apply the rules set forth in SB 542? Please separate out firefighter and peace officer estimated costs.

A: *We modeled a policy similar to that proposed in the original draft of SB 542—retroactive application of a PTSD presumption to workers injured in the 2017–2019 period, including those with claims in adjudication or whose PTSD claims were denied and closed. Under an intermediate scenario (as described under RQ11 above) and the assumption that retroactive claims would result in payment of medical care benefits but not new indemnity benefits, state and local governments collectively might have expected to pay an average of $13 million per year for peace officer claims and $2.6 million per year for firefighter claims between 2020 and 2024. The range of uncertainty is very large, however: Plausible assumptions about incidence rates and behavioral responses could result in average yearly costs to state and local governments in the 2020–2024 period that range from $5 million to $25 million for peace officers and from $4.6 million to $25 million for firefighters.*

Because we could not directly estimate incidence rates, we analyzed two scenarios with differing assumptions about the true incidence rate of PTSD. A lower-incidence scenario (with a 1.6-percent annual incidence rate for peace officers and a 3.6-percent annual incidence rate per year for firefighters) was defined by assuming that the incidence rate for peace officers is equal to the general population incidence rate of anxiety disorders; incidence rates for firefighters were scaled up to reflect differences in the occupation-specific CHIS estimates of the prevalence of moderate and serious psychological distress. A higher-incidence scenario (with a 5-percent annual incidence rate for peace officers and an 11.5-percent annual incidence rate per year for firefighters) was defined by assuming that the incidence rate for peace officers was at the lower

range of PTSD incidence estimated for active-duty service members in the Iraq and Afghanistan wars, with firefighter incidence rates scaled up by the same factor.

Notwithstanding these limitations, our analysis indicated that SB 542 could lead to substantial increases in the volume of first responder mental health claims involving PTSD, albeit from a very low baseline. For recent years (2016–2019), we estimate the yearly statewide number of claims involving PTSD prior to SB 542 to be 80 firefighter claims and 168 peace officer claims. Under an intermediate scenario—a scenario in which the true PTSD incidence rate among first responders is similar to that observed for active-duty soldiers in Iraq and Afghanistan, in which SB 542 partially reduces stigma and other barriers to claim filing, and in which the denial rate under SB 542 is halfway between the current PTSD rate and the average rate for other presumptions—we estimate that peace officers will file an average of 1,072 PTSD claims per year over the next five years (a 540-percent increase over the pre-SB 542 status quo) and firefighters will file 260 PTSD claims per year (a 225-percent increase over the pre-SB 542 status quo). *These results are very sensitive to assumptions about the true incidence rate, however.* The low-incidence scenario with the same intermediate assumptions about behavioral responses results in 422 peace officer PTSD claims per year (a 251-percent increase over the pre-SB 542 status quo) and 125 firefighter PTSD claims per year (a 56-percent increase over the pre-SB 542 status quo).

Given the wide range of uncertainty about the true incidence rate and the volume of new workers' compensation claims, there was also a very wide range of uncertainty around our cost estimates. In the high-incidence scenario, with intermediate behavioral assumptions, the total cost of benefits on PTSD claims over five years (2020–2024) was $473,000,000 for peace officers and $103,000,000 for firefighters, or $95 million and $24 million per year. In the low-incidence scenario, with intermediate behavioral assumptions, the total cost of benefits on PTSD claims over five years (2020–2024) was $198 million for peace officers and $53 million for firefighters, or $40 million and $11 million per year. For comparison, the estimated lifetime costs associated with the average annual number of statewide PTSD claims over the 2016–2019 period were $8.1 million for peace officers and $3.5 million for firefighters. Additional details on projected costs by year, separate results for state and local government, and alternative scenarios are presented in Chapter 7.

We also estimated the potential costs that might result if SB 542 were made retroactive for injury dates in the 2017–2019 period. We started by estimating the number of fully denied claims from 2017 to 2019. We assumed that all of these would refile. We then explored three scenarios for additional claims: (1) all first responders who received treatment from 2017 to 2019 and did not file a workers' compensation claim, (2) all first responders diagnosed with PTSD from 2017 to 2019 who did not seek treatment because of stigma or access but will file a retrospective claim, and (3) half of the workers with PTSD who did not seek treatment due to stigma or access will file. We assumed that only medical costs for claims with a PTSD diagnosis would be

reimbursed retrospectively. If there is a reduction in barriers to treatment and if the denial rate for retrospective workers' compensation is between the current PTSD rate and the average rate for the other presumptions, then we estimate that retrospective costs will be $66,000,000 for peace officers and $13,000,000 for firefighters.

As a final caveat, note that these estimates reflect the cost of benefits but do not account for departments' potential budgetary savings, which might result from reduced absenteeism, disability leave, retirement benefits, or the turnover and training costs associated with the loss of mid- or late-career personnel.

Limitations of Cost Estimates

In Chapter 2, we described the limitations of using the CHIS and WCIS data to generate estimates. Since we rely on these estimates for our cost analyses, the same limitations apply. In addition, there are limitations associated with estimating future behavior. We make reasonable guesses about these changes and provide potential scenarios, but we cannot confidently say which scenario is most likely.

For example, we assume that the annual incidence rate for PTSD is between 1.6 percent and 5 percent for peace officers and between 3.6 percent and 11.5 percent for firefighters. These rates are based on relevant literature (Tanielian and Jaycox, 2008; Grant et al., 2009), but they were not estimated for first responders, and they do not consider how incidence may change over time due to factors independent of SB 542. If a wildfire season is particularly dangerous, for example, then the incidence of PTSD among firefighters might increase; or if more large-scale protests against police officers occur, the incidence of PTSD among peace officers might increase. Such changes in incidence rate will likely lead to corresponding changes in workers' compensation filing rates.

We assume that SB 542 will address some of the barriers that first responders face to seeking treatment; however, it is not clear whether SB 542 will have any impact on stigma or whether workers' compensation will be used as a way to overcome limited access. As discussed, firefighters have a number of resources outside workers' compensation to help them address PTSD, so any increase in treatment-seeking may be absorbed by these alternate avenues and never show up in workers' compensation.

We discussed the difference in cost between denied and accepted claims at the beginning this chapter, and we uses this difference as a key input in analyzing the cost impacts of the presumption. The average difference in cost between accepted and denied claims may differ from the change in costs that would result from initially accepting claims that would have been initially denied under the pre-SB 542 status quo. In general, the difference we observed between the average cost of accepted and denied claims reflects both the causal effect of claim denial (i.e., How does changing the initial denial decision affect costs for a given claim?) and compositional differences between accepted and denied claims. If, as we think is likely, lower-

severity claims tend to be initially denied, then the average accepted claim would cost more if denied than would the average claim that was actually denied prior to SB 542. In this case, the difference in average cost between accepted and denied claims would be an upper bound for the increase in cost that we would expect to result from accepting claims that would otherwise have been denied.

Some observers might be more inclined to assume that claims administrators apply greater scrutiny to (and thus are more likely to deny) claims that appear potentially high-cost. This would imply the opposite assumption about the compositional difference between accepted and denied claims—namely, that the true causal effect of initially accepting a claim that would otherwise be denied is greater than the difference in average costs. In this case, the additional costs that would result from lowering the claim denial rate could be higher than the average difference between accepted and denied claims, in which case our cost estimates may not represent an upper bound.

8. Stakeholder Perspectives on SB 542 and Areas to Improve

Chapter 8 describes the perspectives of mental health providers, claims administrators, and department chiefs in regard to the need for SB 542 and its potential impacts on care-seeking, mental health claims volume, and cost. We also describe stakeholder perspectives on how to improve first responder access to mental health providers.

Perspectives on SB 542

Stakeholders provided thoughts on the potential impacts of SB 542, ideas for improving first responders' access to mental health support, and perspectives on how to improve the workers' compensation system as it relates to the mental health of these first responders. We synthesize data from their interviews here.

Recognition of Suicide and Mental Health and Need for SB 542

Department chiefs consistently noted two main drivers motivating them to want to provide first responders with better, more timely mental health support. First, they pointed to an increased awareness of mental health conditions due to the PTSD presumption (i.e., SB 542) itself. Department chiefs generally viewed the presumption positively. Applicants' attorneys and mental health providers also noted that the passing of SB 542 had increased awareness of first responders' mental health issues. An applicants' attorney stated,

> There has been a big difference with the passing of SB 542 primarily because of the preamble of the bill, as it in itself will help reduce the stigma associated with PTSD and seeking treatment. This was just by passing the presumption itself. *—Northern California urban applicants' attorney (AA-NU01)*

Second, department chiefs spoke about the continual rise in first responder suicides over the years—and under their watch. Many department chiefs cited specific ways they were trying to make mental health care confidential and anonymous (such as having it through unions or located outside the department). In particular, department chiefs talked about ramped-up access to mental health services in the last few years. They mentioned offering a wider array of access points to mental health providers and specifically pointed to efforts to increase access to culturally competent mental health providers—those who understand the jobs of first responders and have training in therapies related to trauma and trauma exposure. As one police chief indicated,

> We have had a couple of suicides in our department. In 2017, we had one that really shook us, several since. It caused us to look at mental health and this differently. One, from a management perspective. We are actively asking how can we get employees the help that they need. We had a

> city-run EAP program, and most employees were concerned about its confidentiality. The peace officers are worried and are asking will they take my gun, so I can't go in the field? We also have moved to work with the union. In those conversations, there was agreement that there is a significant need for help, because of discipline cases, use of force, suicides, marriage issues. We have had too many peace officers who went out due to mental health issues. —*Southern California police chief (PS-DC02)*

Many department chiefs also described creating or building out peer support programs and educational initiatives for first responders more often over the past few years. Education initiatives were aimed at helping first responders recognize their own need for mental health care and encouraging them to access it. Many departments reported working more closely with their unions on these issues. A police chief said,

> We do have on staff two fire psychologists. They are available 24/7 and are supported by the two mental health providers from the union. They rotate on call duty, and we do have our peer support team. I transferred the operational control of the psychologists and peer support to the union. The main reason people didn't look for help is because of firefighters feeling weakness or embarrassment or shame. We were dealing with suicides. I wanted our people to get help. I wanted to remove that barrier. Through the international association of firefighters (IAFF), the peer support firefighters have been getting training that has been paid for by the union. It has been longer than a year, for about 3 years that we have had that peer support run through the union. —*Southern California fire chief (FS-DC04)*

Perspectives on the Potential Impact of SB 542 on Care-Seeking

Department chiefs discussed potential changes they hoped to see from the PTSD presumption. They felt the presumption would increase mental health care-seeking and reduce the stigma related to PTSD diagnosis and treatment. Due to the passing of the PTSD presumption, many departments, along with their unions, had been informing first responders of their ability to file claims under the presumption. They had also provided training and support to help employees identify and get treatment for stress and PTSD. Further, departments had been assessing the costs of treatment versus the costs of losing first responders who did not get treatment to death or retirement. Chiefs questioned the impact of first responders not filing claims or having mental health and stress claims delayed or denied; all believed it was better for first responders to get treatment and get it early. Some departments had ramped up training first responders on care-seeking, mental health, and trauma and were making materials about mental health and mental health treatment more available to employees, to help reduce stigma to care-seeking. A police chief described it this way:

> [In terms of recognizing the signs and symptoms of trauma and stress], we know what to look for because we know what is important to recognize in the changes in behavior. We provide regular in-service training on PTSD, stress, and the signs and symptoms of trauma-related injuries and issues. We had [named mental health provider] here for such a training. It was about what manifests itself, what to look for. We are trying to get people this training early, so they know what to be aware of and what to do. It's wellness and resiliency training. There are different types of providers and with [named mental health provider], we know they have a background of

> credibility with our officers and are good messengers for young officers who do not know what any of this means. It is like maintaining a car. You don't run it until it goes out. You've got to provide maintenance at regular intervals. We have not had a suicide in many years. We don't want to contribute to the statistic. *—Northern California police chief (PN-DC02)*

Applicants' attorneys echoed that the presumption itself helped to eliminate stigma and to encourage firefighters and peace officers to seek out mental health treatment. An applicants' attorney noted the following:

> With the PTSD presumption, the most important piece of the claim is that people file the claim. This signals that they are interested in seeking care for themselves. The problem is that no one wants to file the claims. . . . The best part of SB 542 is that it really makes first responders, firefighters, and police officers feel supported and heard. That will help them reach out for care and hopefully to file. *—Northern California urban applicants' attorney (AA-NU01)*

Because of the costs associated with mental health treatment, particularly intensive treatment like EMDR for PTSD, department chiefs noted the need for workers' compensation to be involved, to help first responders access and pay for care. In particular, first responders themselves noted that treatment costs were high and that group health insurance would not cover treatment for industrial injuries. Most of the first responders interviewed paid for their treatment out-of-pocket (see Chapter 6).

Perspectives on the Potential Impact of SB 542 on Mental Health Claim Volume

When asked, claims administrators reported not seeing changes in their PTSD claims in 2020. They did anticipate more claims for PTSD and COVID-19 due to the pandemic and the increase in incidents of civil unrest, but they indicated that the number of PTSD claims they saw was still smaller than for claims with other presumptions. Given the timeframe of our study and interview, there was not much time to examine how the volume and type of PTSD presumption claims compared to non-PTSD presumption claims. Claims administrators from fire and police departments indicated,

> Other presumptions are going to outweigh the PTSD 10:1. COVID-19 exclusively is going to be extremely high. Hernia is high. Pneumonia is high and follows the flu season. There are more cancer claims because of the multiple types of cancers. We see less throat and lung [cancer], but myeloma, skin, organs, renal, bladder are all up. *—Southern California claims administrator for firefighters (FS-CA01)*

> We have more heart presumption claims than psych claims. Heart is the number one in terms of presumption. It has been for the last five years. COVID-19 will be top two or three for sure. You have officers coming in contact with and testing positive. *—Southern California claims administrator for peace officers (PS-CA01)*

One claims administrator mentioned that denials of PTSD and mental health claims will likely be similar before and after SB 542, citing the need for medical documentation being a part of all presumptions:

> For the other types of claims under presumptions, the denial rates are all similar. If there is no medical substantiation, they are denied so that it is similar across the board, presumption or not. *—Southern California claims administrator for firefighters (FS-CA01)*

While most department chiefs thought the presumption would lead to improvements in care-seeking, there were more mixed thoughts on how the presumption would change the volume of workers' compensation mental health claims. While some department chiefs and claims administrators thought the presumption would increase the number of PTSD claims, a few others thought that, ultimately, it would not lead to a significant change in the number of claims or in the overall claims process for PTSD. A fire chief stated the following:

> [PTSD claims have] gone up since the presumption. . . . Now, the presumption adds workers' compensation as part of the resource set rather than the last line. Now they work well together. It is easier to get care and the resources you need. *—Northern California fire chief (FN-DC01)*

Those who thought the presumption would not increase the volume of claims noted that the presumption helps those who file claims by presuming the injury is work-related; it does not, however, affect first responders' ability to file or support them in filing. The underlying stigma to filing and sharing experiences around stress and PTSD still keep people from using the presumption. An applicants' attorney and a mental health provider observed the following:

> The presumption is not going to help people file workers' compensation claims. I don't think it will change the frequency of workers' compensation claims with a mental component filed. The presumption helps only those that file a workers' compensation claim. When the workers' compensation claims are filed, it will help people get the claim adjudicated faster and the people who filed to treatment faster. *—Northern California nonurban applicants' attorney (AA-NR02)*

> With the presumption, we want to say PTSD and treatment have less stigma, but that is not what I am hearing. They still do not want people to know they are seeking mental health treatment, especially not wanting their chain of command to know. There is just more need. *—Northern California mental health provider who treats firefighters (FN-MH01)*

Claims administrators thought that the presumption would increase the number of claims that are not job-related (i.e., claims that would be denied). Non-work-related factors, such as marriage or financial issues, may lead to stress, rather than work-related issues. With the presumption in place, claims administrators have to presume the injury is work-related and rebut from there. One claims administrator revealed this:

> Originally, I was not very happy about the PTSD presumption, and in all honestly what sticks out in my mind are the mental health claims that go badly. We do deal with the claims that are the peace officer who has discipline issues, etc., and now we have to presume it is work-related. There are personal reasons why someone can be stressed. Their spouse can leave them, they can be going through a bankruptcy. To automatically have it presumed that the stress is work-related, I think, that is a tough pill to have to swallow. *—Northern California claims administrator for peace officers (PN-CA01)*

In addition to impacts on the claims volume, several department chiefs noted improvements in the claims process due to the presumption. In particular, half of the department chiefs (both

fire and peace officer) and several of their claims administrators noted that mental health claims were, to their knowledge, moving faster through the workers' compensation system since the presumption was passed. In particular, claims administrators noted that acceptance of the PTSD diagnosis seemed faster, leading to quicker turnaround of the claim. A fire chief stated,

> Since the [PTSD] presumption, we have had the workers' compensation claims with a mental health component move faster through the workers' compensation system. The diagnosis is also generally accepted. So that it is quicker by several months. *—Northern California fire chief (FN-DC02)*

Perspectives on Potential Impacts of SB 542 on Costs

Department chiefs, mental health providers, and first responders discussed the potential impacts on costs associated with the presumption. The most common cost savings came from having a healthier workforce. With the presumption, department chiefs thought their first responders would get care faster and need less time for sick leave. They also expected to lose fewer first responders due to unaddressed mental health needs. A fire chief explained,

> [The PTSD presumption should be] a lot like the cancer presumption, where you can fly through the system and get treatment faster. It gets us a healthier worker. Less sick usage, and more conversations and efforts to spread around the message of the support by word of mouth. *—Northern California fire chief (FN-DC01)*

In addition, a mental health provider offered the following:

> I think it starts with the department and them seeing the value and cost-effectiveness of having the police officer treated. If you get someone who is a seasoned worker treated and back on their feet, it is much cheaper than losing them from the workforce because of a workers' compensation claim. SB 542, I think, will help with that. *—Northern California mental health provider who treats peace officers (PN-MH03)*

For workers, the presumption can lead to reduced costs through multiple mechanisms. Less time processing the claim leads to less time between filing and getting treatment and less personal time taken while seeking treatment. A mental health provided explained,

> [In one case,] the workers' compensation TPA had required a QME to confirm the validity of their PTSD injuries. This delayed the ability of the mental health provider to begin treatment until after that QME assessment had occurred. The QME took 3.5 months to be done . . . all the while causing unnecessary and undo pain and suffering as well as financial hardship to these men and their families. . . . The bottom line is this: It has been far more cost-effective to have PTSD allowed as a presumptive injury so that the expenses of (1) QMEs, (2) the extended waiting time for treatment of four months off duty, and (3) having to monitor these officers for approximately four additional months, which was in the hundreds of thousands of taxpayer dollars, are bypassed and not incurred.*—Northern California mental health provider who treats peace officers (PN-MH02)*

In most instances of delayed treatment, first responders will pay out-of-pocket to get care faster. In other cases, delayed treatment also prolongs and extends treatment, leading to additional costs to the first responder (see Chapter 4 for information surrounding the additional

costs to first responders caused by delayed claims and treatments). The presumption is meant to reduce that time and those additional costs.

Thoughts on Improving Access to Mental Health Providers

Even with the presumption, department chiefs, claims administrators, mental health providers, and first responders noted issues with accessing mental health providers in the workers' compensation system. Both mental health providers and first responders noted significant barriers to care associated with using workers' compensation. Most mental health providers noted issues getting reimbursed under workers' compensation, leading many to stop taking workers' compensation patients all together. Two mental health providers expressed the following:

> I try not to take workers' compensation because it is a pain in the neck. I don't take it now. Workers' compensation requires someone who dots *i*'s and crosses *t*'s. It takes a lot of paperwork. I feel insecure in the workers' compensation system because I don't want to hurt people. I have never been in workers' compensation voluntarily. . . . We do some trauma work, and then they file a workers' compensation claim. Once they are in the workers' compensation system, I am not going to drop them after I have seen them for months. *—Northern California mental health provider who treats firefighters (FN-MH01)*

> What I do is not always paid by workers' compensation. Psychiatrists and psychologists are almost always paid through workers' compensation because they are on the workers' compensation MPN [Medical Provider Network] and plan. I get the firefighters or police officers before they are taken off of work to provide treatment. It is difficult and takes a while to gain approval with workers' compensation because of the paperwork issues. It is so arduous and time-consuming to get approval from workers' compensation for treatment. The payment from workers' compensation is only about half than what the other insurances pay. For example, EAP and then, if need be, to their medical group health. *—Northern California mental health provider who treats firefighters (FN-MH01)*

In addition to difficulties with reimbursement, many mental health providers noted difficulty getting the correct amount (and sometimes type) of treatment for their first responder patients. They noted that workers' compensation would authorize a certain number of visits for first responders, which sometimes fell well below their recommendation for treatment, leading to additional difficulty in working within the workers' compensation system. Because of these challenges, mental health providers and claims administrators discussed the need to streamline the treatment process within the MPN so that the recommended type and amount of treatment is approved and provided to first responders without being interrupted by claim delays and riddled with reimbursement issues. A claims administrator indicated,

> To reduce denials of mental health claims, there needs to be a process for getting the correct medical documentation, providing guidelines for workers' compensation to be used by non-workers' compensation providers, and also efforts to improve the firefighter culture and to reduce the stigma around mental health claims, and to figure out ways to have firefighters go directly to

> the workers' compensation avenue for mental health treatment, so that the mental health workers' compensation claims and the workers' compensation process can be more streamlined. *—Southern California claims administrator for firefighters (FS-CA01)*

In addition, other arrangements exist to better connect first responders to care outside the workers' compensation system. A few departments, cities, and unions worked together to create carve-outs for stress or for PTSD treatment. Several other department chiefs discussed the importance of having a relationship with their unions to support accessing and seeking care. In departments that had lower rates of denials, chiefs discussed working with unions to set up programs to address first responder concerns. One police chief stated,

> We know whether peace officers are gaining the support they need from feedback, primarily from the union. The union is not shy about telling us we are doing wrong. They tell us we are doing better now that we are contracted with [*NAMED mental health provider organization*]. We now have a place to refer people. We feel more confident about discipline and other processes. We are in a better place. *—Southern California police chief (PS-DC02)*

These departments—one fire and four police departments—created arrangements that "sidestepped" the workers' compensation system. Of these five departments, three were urban, two were in Northern California, and three had low denial rates on mental health claims. All five of these departments discussed a history of suicides or other acute events that prompted chiefs and other officials to create mechanisms to get first responders care quickly, without having to go through workers' compensation. A mental health provider explained the following:

> We had several police officer suicides. Suicide is a predictable way out for cops because they cannot tolerate feelings of helplessness and have access to weaponry. There have been many over the years with [named city]. The trauma response and peer support reached out to these police officers who were involved or struggling officers. They touched the same flame. Something more needed to be done. *—Southern California mental health provider who treats peace officers (PS-MH01)*

These arrangements had been in place anywhere from two to over 30 years, but all covered treatment specific to mental health. In one department, an external organization with culturally competent mental health providers was contracted to provide care for first responders without having to go through workers' compensation. Treatment included therapy as well as coverage for services such as critical incident debriefs. A police chief stated,

> Sworn personnel also have access to psychological counseling and as much as they want. It is in the officer contract. All of these options are anonymous. The city pays for the one-on-one counseling treatment, and they can go as much and as long as they want or need. *—Northern California police chief (PN-DC01)*

For these arrangements, department chiefs discussed working with the city, unions, and departments to set up line items within their budgets for treatment. These line items existed to cover care for retreats and other services to the department and were provided explicitly outside of workers' compensation, to ensure more timely access to treatment.

Summary of Findings

In this chapter, we described the perspectives of mental health providers, claims administrators, and department chiefs in regard to the need for SB 542 and its potential impacts on care-seeking, mental health claims volume, and cost. Department chiefs noted the significant impacts of suicide being a primary motivator to improving mental health supports for their departments, which included adding services and expanding existing programs. They felt the presumption would increase care-seeking and reduce the stigma around care-seeking, but they still increased training and messaging around care-seeking to further reduce stigma. While most departments thought the presumption would increase mental health claims, some thought claims volume would not really change since the presumption supported claims moving through workers' compensation but did not affect the decision of a first responder to file. There was also concern that the presumption would increase non-job-related claims, but nearly all departments noted that the presumption has helped move claims through the system faster. Having a healthy workforce was noted as being among the biggest cost-savers that resulted from the presumption, as replacing seasoned officers or retiring out individuals who could have been treated is especially costly. First responders noted that the presumption could decrease their personal costs by keeping them from paying for care out-of-pocket and by reducing delays that prolonged treatment.

Additionally, we discussed how to improve first responders' access to mental health providers. Providers discussed difficulties getting paid by workers' compensation, leading them to leave the system altogether. These difficulties extended to treatment allocation, as many mental health providers said they were authorized for fewer treatment sessions than were needed per individual. Further, first responders noted the need for more culturally competent providers in the MPN. Arrangements were made outside the workers' compensation system, such as contracts with mental health clinicians and provider organizations that specialized in treating first responders, to try to improve access to mental health care generally and to culturally competent mental health providers in particular. These "sidestepping" arrangements were generally negotiated between the department, the city, and the union to get first responders into care faster and with culturally competent providers who had high success rates for treating clients.

9. Policy Recommendations and Future Research Priorities

Chapter 9 provides policy recommendations and highlights priorities for future research.

Policy Recommendations

Our study uncovered numerous challenges in the functioning of the workers' compensation system for workers with mental health conditions. Some of these challenges created barriers that deterred first responders from accessing care for PTSD. It is plausible that the presumption in SB 542 could help address some of these challenges: If these effects materialize, then these impacts might constitute arguments in favor of continuing the presumption in SB 542.

Comparison of denial rates on PTSD claims with denial rates for other presumption conditions suggests that SB 542 is likely to reduce denials of PTSD claims. The extent to which this will pan out remains to be seen, however. Denials lead to delays in care and prolong mental health treatment, so reduced claim denials may help workers recover faster. Issues with documenting traumatic incidents that cause denials and delays may also become less widespread with a presumption in place. Finally, it is conceivable that a reduced threat of denials will encourage more people to come forward.

On the other hand, there are potential arguments against continuing the presumption in SB 542. It could be costly to state and local government, although there is a lot of cost uncertainty due to uncertainty about the true prevalence of PTSD. It is also not clear how large the reduction in denials will be: Cancer and heart disease claims, which have been covered by presumptions for years, have denial rates that are not much lower than those observed for PTSD under the pre-SB 542 status quo.

Our study uncovered a number of serious challenges preventing first responders with PTSD and mental health conditions from receiving timely and appropriate care. Many of these challenges do not originate (or do not originate only) within the workers' compensation system, and it seems clear that SB 542—even in a best-case scenario—is not a panacea for all of the issues involved in first responders' mental health care.

First responders reported widespread difficulty accessing culturally competent mental health care. Concerns were raised about the quality and availability of mental health care providers in the medical provider networks (MPNs) that were accessible through workers' compensation (although this study did not analyze MPN composition, and further investigation would be needed to determine how representative these challenges are of the system as a whole).

Other problems with access to care emerged from the complexity of the overall health care system. First responders indicated that employee assistance programs (EAPs) did not provide culturally competent providers and that visit limits in EAPs made the care they provided of little

value. Workers had little confidence that health insurance would pay for mental health care, and mental health providers were reluctant to take workers' compensation cases. Workers have responded to these barriers by paying for care out-of-pocket, but this is not a real policy solution. Some departments have made strides in providing more timely mental health treatment to large percentages of their first responders by sidestepping the workers' compensation system. Such arrangements should be studied to understand their costs and benefits and their ability to replicate these models or incorporate aspects of them within the workers' compensation system.

Finally, we reiterate that PTSD and suicide risk are not unique to peace officers and firefighters. Among private-sector occupations, ambulance drivers, EMTs, and security guards had higher rates of PTSD claims and appeared to have higher rates of mental distress and suicidality than first responders covered by the SB 542 presumption. Correctional officers were twice as likely as peace officers to have PTSD diagnoses on their workers' compensation claims and had denial rates that were statistically indistinguishable from peace officers, but it is unclear whether they are covered by the presumption in SB 542.

Unlike other workers' compensation presumptions for public safety workers in the California Labor Code, the presumption established by SB 542 will expire in less than five years—on January 1, 2025—without further legislative action. The evidence in this report is not sufficient to make an up-or-down recommendation as to whether the presumption in SB 542 should be continued. Much more evidence, including *ex post* evidence on how the system operates with SB 542 in place, is needed before any such recommendations can be made. The research in this report points to a number of questions that should be addressed if the legislature wants to make an informed decision.

Future Research Priorities

Our policy recommendations are tentative, in part because so much remains unknown about the actual impacts of SB 542. We therefore think it is important to highlight a number of research needs that emerged in the course of this study.

Ex Post *Evaluation of SB 542*

The timeline of this study—and the disruption caused by the COVID-19 pandemic—curtailed our ability to study how the workers' compensation system is handling first responder mental health claims now that SB 542 is in place. It would be valuable for California to revisit the questions examined in this study as the expiration of the SB 542 presumption (at the end of 2024) draws nearer. At this point, the COVID-19 pandemic will have (we hope) receded and the workers' compensation system, departments, and first responders will have had more time to adjust to the new status quo under SB 542. A retrospective evaluation would be particularly important for providing direct evidence on care-seeking patterns, claim denial rates, and claim costs with the presumption in place.

Future qualitative research could also investigate whether, as hoped by the legislature, SB 542 succeeded in reducing mental health stigma among first responders or in promoting other changes in department culture. It would also be possible, after SB 542 has been in place for several years, to conduct a representative survey of first responders, to document their awareness of the law and, for those who filed mental health claims, to determine whether their knowledge of the presumption or other factors affected their decision to file or to seek mental health care. Finally, the cost impacts of PTSD associated with turnover, training, and early retirement could not be modeled in the scope of this study; an *ex post* evaluation could potentially be scoped to measure these impacts and quantify their implications for the net costs of SB 542, although note that such a study would be far more demanding (in terms of data and effort) than the current study.

Unanswered Questions About the Workers' Compensation Claims Process

Further in-depth study into several aspects of the workers' compensation system is needed. Better information about claims administrator practices could be used to develop more detailed guidelines as to what information should be provided with mental health claims, reducing denials due to inadequate documentation. Discussions with workers' compensation mental health professionals about the details and paperwork they are required to submit, along with conversations with a larger pool of culturally competent mental health professionals who treat first responders about their document-keeping, could provide information that would help in developing a mechanism (e.g., a checklist of details about traumas) that would facilitate better documentation of first responder mental health care and treatment plans. Further investigation is also needed to understand why mental health treatment is not being fully covered for first responders with accepted claims, including the potential disconnect between mental health providers and the ACOEM treatment guidelines on the efficacy of eye movement desensitization and reprocessing (EMDR) therapy for PTSD.

Finally, CHSWC may want to more carefully examine MPNs and explore ways to provide first responders with a wider choice of culturally competent mental health providers that are willing to accept workers' compensation patients. And if such a study confirmed systemic problems with mental health providers participating in workers' compensation, then future policy could address MPN regulations for mental health providers or make changes to the fee schedule for mental health care. Alternatively, if the problems documented here reflect worker misperceptions or other barriers to access rather than provider shortages, improved case management or other efforts to bolster communication with injured workers might be appropriate.

How Should We Provide Mental Health Care to First Responders?

Looking beyond the workers' compensation system, our interview findings suggested that there may be very serious problems with the broader mental health delivery and financing system available to first responders. Our interviews indicated that, at present, mental health care delivery and financing are fragmented between EAPs, ESI, workers' compensation, direct care provision by departments or unions, and care paid entirely out-of-pocket by injured workers themselves. Differences across these systems include which providers participate, the number of visit limits, the administrative processes used for provider reimbursements, payers' willingness to reimburse for workplace injuries, and, of course, the share of expenses paid by patients (ranging from 0 percent for EAPs and workers' compensation to 100 percent for self-pay). Our characterization of the mental health delivery system facing first responders is based on a limited number of interviews and cannot be assumed to represent a statewide average. That said, it should not be surprising that first responders suffering from PTSD reported great difficulty in accessing timely and culturally competent care and that many of them gave up on workers' compensation and ESI, opting to pay out-of-pocket—even when doing so led to great financial hardship.

Our interview findings suggested potential changes to specific pieces of the system, pending future investigation. First, workers did not find EAP care helpful for PTSD. These findings, if substantiated by future research, might urge departments to redesign EAPs or to follow some of the departments in our sample by contracting directly with culturally competent providers. Second, we discovered that, despite patient-client privilege, HIPAA, and strong state and federal mental health parity laws, first responders with mental health conditions did not believe that ESI covered mental health or that they could be assured of confidentiality if they sought care. This could be addressed with better education and messaging by departments and by fellow peers who have accessed ESI-covered mental health care, on the type of mental health care covered by ESI and the stringent rules surrounding confidentiality of such sessions. To add another layer of confidentiality, such ESI-provided mental health care should not be co-located in buildings used by the departments.

While more work is needed to substantiate the concerns raised by our interview subjects, piecemeal improvements to EAPs, ESI, or workers' compensation may not be sufficient to get first responders with PTSD the care they need when they need it. Direct care provision—effectively bypassing their existing EAP, ESI, and workers' compensation programs—is an intriguing model that several departments have used to fill these gaps in mental health care. Yet essentially nothing is known about the costs and benefits of providing direct care for mental health in first responders, or even about how widespread this practice is. A useful first step would be to survey departments to determine how many are sidestepping workers' compensation by providing direct mental health care. More broadly, policymakers, departments, labor unions, and providers should be consulted to identify and evaluate various avenues for improving the access to, and timeliness of, mental health treatment for first responders (such as contractual

agreements with unions, departments, and cities). Another issue worth considering, which was not raised by the departments in our study, is whether workers' compensation carve-out arrangements—which are common in California's public safety agencies—in conjunction with more serious attention to the composition of mental health provider networks in group health, could help reduce the fragmentation of payers that was so deleterious to first responders with PTSD.

The ultimate goal of SB 542 was not just to provide workers' compensation benefits to first responders: the legislature enacted SB 542 with the hope that, by reducing stigma and promoting workers' compensation claiming, first responders suffering from posttraumatic stress would be more likely to receive high-quality care when it was needed—before untreated PTSD resulted in permanent disability, early retirement, or suicide. SB 542 seems likely to facilitate workers' compensation claiming, but it is far from clear that the workers' compensation system is the best possible system for delivering mental health care that is suitable to first responders. It is entirely possible that SB 542 will succeed in destigmatizing mental health and ensuring fair and rapid disability compensation to first responders with PTSD but that first responders will continue to struggle with finding culturally competent and timely mental health care, relying instead on a mix of self-pay and, in some departments, direct care provision. Rigorous *ex post* evaluation will be needed to determine how representative our interview subjects are, but policymakers concerned with the mental health and readiness of first responders might wish to start building the evidence base needed to establish a better-integrated system for the delivery and financing of mental health care.

Examine Mental Health in Other Occupational Groups

Although firefighters and peace officers covered by the presumption in SB 542 were the central focus of this study, our study uncovered alarmingly high rates of mental distress and suicidality in several comparison occupations not covered by the PTSD presumption, including EMTs, ambulance drivers, and private-sector security guards. For a number of reasons, including differences in preemployment screening and the healthy worker effect (as discussed in Chapter 3), the evidence presented here does not tell us if the worse mental health in these jobs is due to workplace exposures or if presumptions should be expanded to these other occupations. Instead, we view these findings as a call for researchers and policymakers to consider the mental health impacts of occupational trauma exposure and working conditions across a much wider set of jobs and industries. It seems entirely likely that many of the serious problems that first responders experienced with the mental health care delivery system also apply to these other groups of workers, who generally receive much lower pay, have higher turnover, and are less likely to be unionized than first responders.

To facilitate evidence-based policymaking in this area, policymakers might consider providing funding for the CHIS to add items specifically measuring PTSD (e.g., the PCL, known

as the PTSD checklist) (Bovin et al., 2016; Weathers et al., 1993; Weathers et al., 2013a; Weathers et al., 2013b); questionnaire items to measure mental health stigma in survey reporting have also been developed, and their addition to the CHIS could support more informative comparisons across occupations with differing levels of stigma. More generally, state policymakers might benefit from a more systematic approach to determining when presumptions are warranted and in which occupations they are warranted. This question became increasingly relevant in 2020, with the establishment of a presumption for COVID-19, which covered a much wider set of occupations and industries.

Appendix A. Question-by-Question Summary of Findings

In the introduction to this report, we laid out the 12 research questions enumerated in Assemblymember Daly's letter regarding the presumption established by SB 542. In Table 1, we displayed which research questions were addressed in which chapters. Here, in Table A.1, to help CHSWC and other interested policymakers interpret the overall results of this report, we lay out the research questions along with concise summaries of our answers to all 12 research questions.

Table A.1. Answers to Research Questions (RQ) Posed by CHSWC

RQ1:	Do firefighters and peace officers have a higher incidence of traumatic stress injuries than non-public employees that pose similar exposure to traumatic stress, such as emergency room personnel, security guards, or private ambulance service employees?
A:	*We were unable to produce estimates of PTSD incidence or prevalence due to data limitations. However, analysis of two representative health interview surveys, one national and one for California, did not find that the prevalence of serious mental distress (i.e., symptoms predictive of serious mental illness) was higher among firefighters and peace officers than among workers in similar occupations. We found significantly lower rates of moderate mental distress in peace officers than among workers in similar occupations, but no statistically significant differences in moderate mental distress between firefighters and workers in similar occupations. Lower prevalence rates are suggestive of lower incidence rates, but note that representative estimates of occupation-specific incidence rates were not available and that gathering them was not within the scope of this study.*
RQ2:	Do firefighters and peace officers experience a significantly higher incidence of suicide, attempted suicide or other serious mental health conditions than other employees generally?
A:	*Not for men, but possibly for women. The most recent nationwide estimates of occupation-specific suicide mortality rates from the CDC do not show that male firefighters or peace officers are at elevated risk of suicide compared with the overall male workforce. Women in protective service occupations did have elevated suicide mortality rates compared with all female workers, but published estimates do not indicate whether this is driven by higher suicide mortality rates among firefighters and peace officers or by higher suicide mortality rates among other protective service occupations with substantial female employment. Estimates from household survey data that are representative of California showed a lifetime prevalence of suicidal ideation in firefighters and peace officers that was statistically significantly lower than that in workers in similar occupations.*
RQ3:	Are claims by firefighters and peace officers for mental health conditions denied under circumstances where the condition appears to be job-related but the employee has/d difficulty proving that fact, and is/was the rate of denial statistically different from other claims by firefighters (or peace officers) that are subject to presumptions of compensability? NOTE: As part of the response to this question, the contractor should analyze the denial rates of claims subject to presumptions of compensability, whether denial rates are different based upon the entity adjusting the claims (third-party administered [TPA], self-administered, or insured) and describe the ultimate disposition of denied claims, either upheld or reversed.
A:	*Yes. A higher proportion of workers' compensation claims involving PTSD are denied for firefighters (a 23.6-percent initial denial rate) and peace officers (a 27.2-percent initial denial rate) than for workers in similar occupations, although some differences were not statistically significant. Initial claim denial rates for both firefighters and peace officers were higher on claims handled by TPAs than on claims handled by self-administered employers, with these differences being marginally significant for firefighters and statistically insignificant for peace officers; however, differences in the denial rates on claims involving PTSD or other anxiety and trauma-related disorders were statistically significantly higher at TPAs for both firefighters and peace officers. Claims involving PTSD are also rejected at a statistically significantly*

higher rate than claims involving all other presumption conditions pooled together, although differences between denial rates for PTSD and cancer were only marginally significantly higher for firefighters.

RQ4: Do firefighters and peace officers file claims for mental health conditions at a rate statistically different from other employees?

A: For firefighters, yes. Conditional on filing a workers' compensation claim, the proportion of workers' compensation claims involving PTSD is statistically significantly higher for firefighters (0.9 percent of workers' compensation claims) than for workers in comparable occupations, including ambulance drivers and EMTs (0.5 percent). For peace officers, results are mixed. Conditional on filing a workers' compensation claim, the proportion of peace officers' workers' compensation claims involving PTSD (0.7 percent) is statistically significantly higher than, but very close to, the proportion of workers' compensation claims involving PTSD for a comparison group of similar occupations (0.7 percent). The proportion of peace officer claims involving PTSD is also statistically significantly lower than the proportion of workers' compensation claims filed by security guards (1.1 percent) or correctional officers (1.5 percent) that involve PTSD.

RQ5: Are claims by firefighters and peace officers for mental health conditions denied under circumstances where the condition appears to be job-related, but the employee has difficulty proving that fact, and is the rate of denial statistically significantly different from other claims and from other types of employees?

A: Yes. In-depth interviews with firefighters, peace officers, mental health providers, and claims administrators indicated that incomplete documentation of traumatic exposure is a common reason for apparently work-related PTSD claims to be denied. Analysis of WCIS data also indicated that claims involving PTSD are more likely to be denied when filed by firefighters or peace officers than when filed by workers in similar occupations; the difference between denial rates for firefighters and ambulance drivers/EMTs was not statistically significant, nor was the difference between denial rates for peace officers and correctional officers.

RQ6: In addition to quantifying data requested in number 4, above, please consult with the professional mental health community to determine the feasibility of proving or disproving the job-relatedness of these mental health conditions.

A: In-depth interviews with mental health providers who treat first responders indicated a widespread belief that PTSD in first responders could often be attributed either to specific traumatic exposures, cumulative exposure to traumatic events, or retraumatization. Rigorous preemployment psychological screening was cited as a reason why new-onset mental health conditions among first responders could be attributed to employment. However, mental health providers also noted challenges in proving job-relatedness in the workers' compensation system before the enactment of SB 542.

RQ7: To the extent that claims for mental health conditions filed by firefighters (or peace officers) are being denied by employers, is this occurring following prior treatment that was covered by employer-sponsored or other health care coverage, where the treating provider(s) concluded the condition was job-related, or in cases where there was no prior treatment or diagnosis?

A: In-depth interviews with firefighters, peace officers, mental health providers, applicants' attorneys, and claims administrators indicated that receipt of a PTSD diagnosis and treatment prior to filing a workers' compensation claim improved workers' chances of having the claim initially accepted, but that denials occurred both in cases with and without prior treatment or a prior PTSD diagnosis. Additionally, these interviews uncovered the fact that receipt of PTSD treatment prior to filing a claim (or after filing, due to delays and denials) was most often not covered by employer-sponsored or other health care coverage but was paid for by first responders themselves. (See also RQ10.)

RQ8: Of the claims that involve mental health conditions, what percentage of these claims were primarily for mental health issues, and what percentage of these claims involved a mental health claim as a compensable consequence to a claim for physical injuries?

A: Most (51 percent) firefighter and peace officer claims involving anxiety and trauma-related disorders were initially filed for physical injuries only. About a third were filed for mental injuries only. Remaining claims involving anxiety and trauma-related disorders were mostly filed as cumulative injuries not otherwise classified (13.5 percent of firefighter claims and 15.0 percent of peace officer claims), with a small number filed as combined mental and physical injuries (3.5 percent of firefighter claims and 1.8 percent of peace officer claims).

RQ9:	To what extent are mental health claims filed by public safety officers post-separation/termination claims, as opposed to claims for which the employer had notice during the term of employment?
A:	*Firefighters and peace officers are statistically significantly more likely to file post-employment claims involving PTSD than are workers in similar occupations, but the vast majority (96.8 percent of firefighter PTSD claims and 97.9 percent of peace officer PTSD claims) involving PTSD are filed during the term of employment. Interviews with claims administrators also found that first responder claims involving PTSD or other mental health conditions were filed during the term of employment.*
RQ10:	In the case of denied workers' compensation claims by firefighters and peace officers for mental health conditions, is there evidence that the claimant later sought and obtained care through employer-sponsored or other health care coverage?
A:	*No. In-depth interviews with peace officers and firefighters did not identify any workers who received mental health care through employer-sponsored insurance (ESI). Reasons given for avoiding ESI included confidentiality concerns, the belief that mental health care from culturally competent providers would not be covered by ESI, and the belief that ESI would not pay bills for potentially work-related health conditions.*
RQ11:	What might the costs to state and local governments be for each of the next five years now that SB 542 is in effect? Please separate out firefighter and peace officer estimated costs.
A:	*The anticipated costs to state and local governments are highly indefinite, due to the uncertainty about the true incidence rate of PTSD, the impact of SB 542 on stigma and claim-filing behavior, and the impact of SB 542 on claim denial rates. In an intermediate scenario—assuming that annual PTSD incidence is comparable with that observed for active-duty military deployed to Iraq and Afghanistan, that SB 542 will reduce stigma and access-related barriers to seeking PTSD treatment by half, and that PTSD claim denial rates will be halfway between the pre-SB 542 status quo and the average for all presumption conditions—state and local governments collectively might expect to pay an average of $95 million per year over the 2020–2024 period for peace officer claims that involve PTSD and have injury dates of 2020 or later; and they might expect to pay $21 million per year over the 2020–2024 period for firefighter claims that involve PTSD and have injury dates of 2020 or later. Under the pre-SB 542 status quo, we estimate that paid amounts for claims involving PTSD with injury dates of 2020 or later would have averaged $14 million per year over the 2020–2024 period for peace officer claims and $6 million per year over that same period for firefighter claims. With SB 542 in place, paid amounts for workers injured in 2020 or later will grow from $49 million in 2020 to $136 million in 2024 for peace officers, and from $11 million in 2020 to $29 million in 2024 for firefighters; most costs will be paid by local governments, which employ 89 percent of nonfederal peace officers and 87 percent of nonfederal firefighters in California. The range of uncertainty is very large, however: over the 2020–2024 period, plausible assumptions about incidence rates and behavioral responses could result in average yearly costs to state and local governments that range from $38 million to $179 million for peace officers and from $10 million to $168 million for firefighters.*
RQ12:	What would the costs to state and local governments be that are associated with the retroactive application of the rules set forth in SB 542? Please separate out firefighter and peace officer estimated costs.
A:	*We modeled a policy similar to that proposed in the original draft of SB 542—a retroactive application of a PTSD presumption to workers injured during the 2017–2019 period, including those who had claims in adjudication or whose PTSD claims had been denied and closed. Under an intermediate scenario (as described under RQ11) and the assumption that retroactive claims would result in payment of medical care benefits, but not in new indemnity benefits, state and local governments collectively might have expected to pay an average of $13 million per year for peace officer claims and $2.6 million per year for firefighter claims between 2020 and 2024. The range of uncertainty is very large, however: over the 2020–2024 period, plausible assumptions about incidence rates and behavioral responses could result in average yearly costs to state and local governments that range from $5 million to $23 million for peace officers, and from $5 million to $25 million for firefighters.*

NOTE: A = Answer.

Appendix B. Additional Information on Qualitative Methods

Qualitative Methods

This appendix provides the script used by mental health providers to solicit first responders' interest in the study. In addition, it outlines the interview topics used for each stakeholder type. Finally, it provides information about the participating departments and the samples of applicants' attorneys and first responders.

Script used for referral-based recruiting for worker interviews. We provided the script in Table B.1 to participating mental health providers who had agreed to recruit first responders whom they had treated for job-related incidents. We instructed these providers to use this script to contact clients who belonged to the department involved in the study. The script aimed to introduce the first responders to the study and to gain their interest. It also requested their permission to either pass on their contact information to the RAND study team or to allow a

Table B.1. Mental Health Provider Script

For mental health providers to use to solicit firefighter and peace officer clients for interest in the RAND study and possibly to conduct an interview with the RAND team.
I wanted to tell you about a research project that your department is working on with the RAND Corporation, a nonprofit organization that does research on important policy problems. They want to help the California Commission on Health and Safety and Workers' Compensation to assess the occurrence of mental health conditions or illnesses that afflict active firefighters and peace officers, and whether or not claims of mental health conditions or illnesses filed by active firefighters and peace officers are being accepted or denied. To do this, the RAND team wants to talk with firefighters and peace officers in a sample of departments across California who could share their experiences of what it was like to get treatment for a work-related claim resulting from mental health symptoms and how the process/experience could be improved in the future. The chat would be on the telephone and would only take about a half hour. I thought this is a great opportunity to share your experience and inform how future first responders obtain care for mental health problems. The interview is totally confidential and separate from your employment, so I won't be involved in your interview. Would you be interested in finding out more information? Can I give them your contact information so you could see if this is a good fit for you? Or if you prefer, you may call *Dr. Denise Quigley*, who leads the study at **1-800-xxx-yyyy,** or *Lynn Polite*, who is available to answer questions at **1-800-xxx-yyyy.** Or if you'd rather, please FILL IN your contact information here and I will send it to Denise Quigley by *EMAIL: quigley@rand.org* Your Name: _____ First Last _____ Phone number 1 Phone number 2

study team member to contact them. This referral-based recruiting method had been used successfully by Dr. Meredith in her studies of PTSD in the military (Meredith et al., 2011).

Topics of the interviews. The interview protocols were tailored to each of the stakeholder groups. We used the semistructured interview protocols to collect the experiences of applicants' attorneys representing first responders asking them about the type of legal help that first responders seek and about the details of proving that mental health conditions are job-related. We also gathered firsthand experiential information from first responders about their exposure to trauma on the job, about their mental health needs and treatments, and about their experiences using the workers' compensation system for mental health claims. Finally, we assembled information from fire and police departments across California by interviewing chiefs about their departments' culture and history as it pertained to mental health treatment and workers' compensation claims. This included asking them questions about the mental health resources available to their workers. We asked claims administrators about their experiences with delays, denials, and acceptance of mental health claims for first responders. We also asked the department-referred mental health providers that treated first responders about the care and support they provided to those first responders who had filed workers' compensation claims. Table B.2 reviews the main interview questions asked of each responder type and links each interview question to the research question(s) it addresses.

Table B.2. Main Interview Questions Mapped to Study Research Questions, by Respondent Type

Research Question (RQ) Addressed		Interview Participants
		Fire and Police Department Chiefs
RQ3,5	1.	What types of resources are available for workers dealing with behavioral health needs?
RQ3,5	2.	How does your department address mental health issues and mental health support for employees? Is this any different as it relates to a traumatic event that occurred for several firefighters/peace officers? How long has this been the approach at your department?
RQ3,5	3.	In your opinion, does your department have the necessary behavioral health services for firefighters/peace officers in crisis? Why or why not? (If "why not," then probe: What are you lacking that is needed?)
RQ3,5	4.	How does your organization recognize signs and symptoms of trauma, or a firefighter/peace officer suffering from mental health issues? How long has this been the approach at your department?
RQ3,5	5.	Are you able to recognize signs and symptoms that might indicate consequences of trauma (e.g., PTSD)?
RQ3,5,10	6.	In your opinion, is this process of identifying those who need mental health support working? Why or why not? (if "why not," then probe: What are you lacking that is needed?)
RQ5	7.	Please describe what resources are available to address PTSD and other behavioral health needs.
RQ3,5,10	8.	What has been your experience in knowing whether firefighters/peace officers are gaining the support they need? (Probe: Have you experienced that a worker with a denied claim sought treatment later?)

Research Question (RQ) Addressed		Interview Participants
RQ3,5,10	9.	Are you aware of when or if a firefighter/peace officer is denied a claim for mental health support? (Probe: How do you know? Is there anything further you can do to assist? Do you have difficulty proving the circumstances of the mental health condition are job-related?)
RQ3,5,10	10.	What are your thoughts on how to reduce denied claims for mental health provision for firefighters/peace officers?
		Mental Health Providers
RQ6,7,10	1.	Do you have patients/clients who are firefighters or peace officers who have their workers' compensation claims for mental health support denied?
RQ6,7,10	2.	How often does this happen and for what reasons? (Probe: How many firefighter/peace officer claims for clients of yours have been denied in the last year? How many workers' compensation claims for other types of clients have been denied in the last year? What is the rough number of workers' compensation clients you have in a typical year?)
RQ6,7,10	3.	In your experience, what determines the feasibility of proving or disproving the job-relatedness of mental health conditions for firefighters or peace officers?
RQ6,7,10	4.	Have you ever treated a patient who had a denied claim for mental health support who later sought and obtained care through other means?
RQ6,7,10	5.	Have you helped a patient overturn a denial for mental health support? How successful is that process? Does it differ for workers' compensation versus medical health care insurance? Or by different types of workers' compensation or health insurance? What is your experience?
RQ6,7,10	6.	What are your thoughts on how to reduce denied claims for mental health provision for a firefighter/peace officer?
		Claims Administrators
RQ5,7,10	1.	What are the main reasons for denying a workers' comp claim for mental health care requests for firefighters and peace officers? (Probe: Is this because of prior history [treatment or other claims], frequency of sessions, comorbidity, unsuccessful treatment episodes, other reasons?])
RQ5,7,10	2.	How many firefighter/peace officer mental health claims have been denied in the last year?
RQ5,7,10	3.	What are the difficulties in proving or disproving that the circumstances of the mental health condition are job-related?
RQ5,7,10	4.	How many workers' compensation claims for other types of clients have been denied in the last year? What is the rough number of workers' compensation claims in a typical year?
		Firefighters and Peace Officers
RQ5,7,10	1.	What was your experience with needing help for a job-related injury that was associated with mental health symptoms?
RQ5,7,10	2.	What has been your experience gaining access to mental health support and paying for it via workers' compensation as it relates to your job? (Probe: If you do have this experience, about when was this, and how did it relate to your job? Did you have any difficulties in proving it was job-related?)
RQ5,7,10	3.	What type of mental health help or support did you get? Was any part of it provided by your employer? Was any part of it covered (i.e., paid for) by your employer?
RQ5,7,10	4.	*If you are comfortable talking about it*, would you describe your experience with trauma and the types of consequences/symptoms that you experienced as a result?

Research Question (RQ) Addressed		Interview Participants
RQ5,7,10	5.	Have you experienced any disruptions to daily life because of events you have witnessed or been a part of on your job? For example, this could be sleep problems, difficulty being in social situations, feeling angry, having a depressed mood, overusing alcohol or other drugs, family problems, or flashbacks or tragic events that replay over and over in your mind.
RQ5,7,10	6.	Do you discuss any of these issues with your family, friends, colleagues, or a spouse or partner?
RQ5,7,10	7.	Have you had prior mental health treatment? (Probe: If so, about when was this? Do you think this had any bearing on your job-related mental health needs?)
RQ5,7,10	8.	What are your thoughts about how others perceive having a mental health issue and/or seeking mental health treatment? Do you worry about what others think?

Characteristics of the participating departments. Table B.3 shows the characteristics of the eight departments included in the study. These are the fire and police department from which we drew department chiefs, mental health providers, and claims administrators for interviews. Categories of characteristics included the type of department (i.e., fire or police), the rate of mental health claim denials (i.e., high or low), the region (i.e., urban or nonurban), and the location in California (i.e., Northern or Southern).

The sample reflects a diverse set of departments across California but is limited to departments willing to discuss mental health treatment and workers' compensation issues. These departments recognized employee mental health as an issue or a priority; given the voluntary nature of the recruiting and our topic of interest, it was highly unlikely we could have included departments that did not see the mental health of their workers as an important issue.

Characteristics of the first responders interviewed. We recruited and interviewed all of the 13 first responders that were referred to us as being interested in the study; this included six firefighters and seven police. Table B.4 provides information about the 13 interviewed first responders (i.e., firefighters or police officers from an urban or nonurban region of Northern or Southern California).

There are limitations to this sample, as it included only those first responders who had pursued mental health treatment (by design); all of these first responders had PTSD as a result of exposure to work-related trauma. As such, this sample does not reflect those who had not sought mental health treatment for work-related trauma exposure.

Characteristics of the applicants' attorneys interviewed. With the help of the California Applicants' Attorney Association (CAAA), we identified a list of ten applicants' attorneys who handled claims for first responders and who practiced law across urban and nonurban areas of Northern or Southern California. We recruited and spoke to nine (of ten) applicants' attorneys. Table B.5 shows the characteristics of the nine interviewed applicants' attorneys.

Table B.3. Characteristics of Participating Departments in the Study

	Count of Participating Departments Total *N* = 8	Percent
Type		
Police	4	50%
Fire	4	50%
Urbanicity		
Urban	4	50%
Rural	4	50%
Resource Level		
Low	1	13%
Medium	4	50%
High	3	38%
Department Does Not Have Permanent Light Duty When a First Responder Returns to Work	8	100%
Denial Rate for Mental Health Claims		
Low	4	50%
High	4	50%
Location		
Northern California	4	50%
Southern California	4	50%
Self-Insured Workers' Compensation Insurance	8	100%
Type of Administration of Workers' Compensation Insurance		
Third-party administrator	6	75%
Self-administered	2	25%

Table B.4. Characteristics of First Responders Interviewed

	Count of Firefighters (*N* = 6)	Count of Peace Officers (*N* = 7)	Firefighter Percent	Peace Officer Percent
Urbanicity				
Urban	3	3	50%	43%
Rural	3	4	50%	57%
Location				
Northern California	3	4	50%	57%
Southern California	3	3	50%	43%
Department Denial Rate for Mental Health Claims				
High	3	4	50%	57%
Low	3	3	50%	43%
Years as First Responder (Mean)	20.3 yrs	19.8 yrs	-	-
Had Military Background	0	6	0%	86%
PTSD Diagnosis	6	7	100%	100%
First Experience with Workers' Compensation	4	4, 2 NA	67%	80%, 4/5
Filed Workers' Compensation Claim for Mental Health	6	5	100%	71%
Had Denial (Any)	3	5, 2 NA	80%, 4/5	100%, 5/5

	Count of Firefighters (*N* = 6)	Count of Peace Officers (*N* = 7)	Firefighter Percent	Peace Officer Percent
Used Initial $10K	0	0	0	0
Workers' Compensation Paid for Mental Health Treatment	1	1, 2 NA	16%	20%, 1/5
Received 4850 Pay (Any)	2	4	33%	57%
Used a QME	4, 1 too early	4, 2 NA	80%, 4/5	80%, 4/5
Hired AA	2	5, 2 NA	33%	80%, 4/5
Final Claim Status				
Accepted	4	1, 2 NA	75%, 3/4	20%, 1/5
Accepted with settlement	1	4, 2 NA		80%, 4/5
Pending	1	0		
Claim Payment Status				
No Workers' Compensation reimbursement	2	0	33%	
Partial Workers' Compensation payment	2	3, 2 NA	50%	60%, 3/5
Full Workers' Compensation payment	1	1, 2 NA	17%	20%, 1/5
Pending	1	1, 2 A	0	20%,1/5
Used EAP	3	2	50%	29%
Mental Health Treatment Started After Filing Claim	3	3, 2 NA	50%	60%, 3/5
Median # of Months from Needing Help to Filing a Claim	5.5 months	3 months, 2 NA	-	-
Median # of Months from Needing Help to Being Treated by Culturally Competent MHP	6.5 months	1.5 months	-	-
Median # of Months from Filing to MH Approval	6 months, 1 pending	6, 2 NA	-	-
Median # of Months of Mental Health Treatment	12 months	7.5 months	-	-

Table B.5. Characteristics of Applicants' Attorneys Interviewed

	Count of Departments	Percent
Type of Applicants		
Mostly peace officers	4	44%
Mostly firefighters	2	22%
Mix of peace officers and firefighters	3	33%
Urbanicity		
Urban	6	67%
Rural	3	33%
Number of PTSD Claims		
None	2	22%
1 to 4	3	33%
5 to 9	2	22%
10 or more	2	22%
Location		
Northern California	5	56%
Southern California	4	44%
Change in Workers' Compensation Claims in 2020		
Same	4	44%
Less	1	11%
More	4	44%

Appendix C. Additional Information and Supplementary Results on Quantitative Analyses

CHIS Analysis Details

Definitions of CHIS Outcome Variables

We constructed several outcome variables using survey respondents' K6 scores. The K6 score is a composite value assigned through answering six survey questions designed to measure the frequency of specific mental health issues in an individual over the past 30 days. All adult respondents of the CHIS were prompted to answer these six survey items, which are as follows:

1. *About how often during the past 30 days did you feel nervous?*
2. *During the past 30 days, about how often did you feel hopeless?*
3. *During the past 30 days, about how often did you feel restless or fidgety?*
4. *How often did you feel so depressed that nothing could cheer you up?*
5. *During the past 30 days, about how often did you feel that everything was an effort?*
6. *During the past 30 days, about how often did you feel worthless?*

In the CHIS, responses to these survey items were initially coded from one to five, where one corresponded to "All of the time" and five corresponded to "None of the time." As discussed in Chapter 2, the typical scoring scale for these K6 items is from zero to four. This required that we recode responses before constructing the indicators for serious and moderate distress used in our analysis.

In addition to evidence of mental distress, we analyzed the prevalence of suicidal ideation and suicide attempts among first responders. For this analysis, we used the following CHIS questions:

1. *Have you ever seriously thought about committing suicide?*
2. *Have you seriously thought about committing suicide at any time in the past 12 months?*
3. *Have you ever attempted suicide?*
4. *Have you attempted suicide in the past 12 months?*

While all adult respondents were asked question one, questions two and three were posed only to those respondents who had *ever* thought about committing suicide, and question four was reserved for those who had ever attempted suicide. Given that our analysis was concerned with the entire population of first responders, responses to questions two through four were recoded to represent all adults. Practically, this meant that if a respondent had never thought about committing suicide, their responses to items two through four were recoded as zero.

The remaining variables of interest sourced from the CHIS included questions related to unmet needs and reasons for no mental health/substance abuse care. These variables are presented in Table 6.1 and were generated from the following CHIS questions:

Need for Mental Health Care:

1. *Was there ever a time during the past 12 months when you felt that you might need to see a professional because of problems with your mental health, emotions, or nerves or your use of alcohol or drugs?*

Utilization of Care for Mental Health(MH)/Substance Use Care (SUD):

2. *In the past 12 months, have you seen your primary care physician or general practitioner for problems with your mental health, emotions, nerves, or use of alcohol or drugs?*
3. *In the past 12 months, have you seen any other professional, such as a counselor, psychiatrist, or social worker, for problems with your mental health, emotions, nerves, or use of alcohol or drugs?*

Reasons for Seeking Care Among Those Seeking Care:

4. *Did you seek help for your mental or emotional health or for an alcohol or drug problem?*

Reasons for Not Receiving Care Among Those Needing It:

5. *Here are some reasons people have for not seeking help even when they think they might need it. Please respond with a "yes" or "no" to tell me whether each statement applies to your reason for not seeing a professional.*
    - *You were concerned about the cost of treatment.*
    - *You did not feel comfortable talking with a professional about your personal problems.*
    - *You were concerned about what would happen if someone found out you had a problem.*
    - *You had a hard time getting an appointment.*

For each of the variables above, responses other than "yes" or "no" (i.e., The respondent refused or said "I don't know") were recoded as missing and excluded from the sample. All adult respondents were asked questions one through three. Question four was reserved for those who answered "yes" to either item two or three. Question five was posed only to those who had answered "yes" to question one but "no" to questions two and three.

Weighting

Estimates from the CHIS used replicate, person-level weights to ensure that all figures reported were representative for the California population. In pooling data across years, we normalized the weights, giving equal weight to each year in our pooled data from 2012 to 2019.

This was done in accordance with guiding documentation, sourced online from the CHIS (UCLA Center for Health Policy Research, 2012).

Statistical Inference

The statistical significance of binary variables in the CHIS was assessed using a Wald test after estimating proportions for each occupation group of interest**.** To account for the complex survey design of the CHIS, we used person-level replicate weights as discussed above**.**

NHIS Analysis Details

The National Health Interview Survey (NHIS) is conducted by the Centers for Disease Control and Prevention and represents the United States' noninstitutionalized, civilian population. The NHIS is the foremost data source for assessing the current state of the nation's physical and mental health.

Definitions of NHIS Outcome Variables

In the NHIS, respondents are asked the same six questions that compose the K6. Once again, the questions were posed to all adult respondents. Unlike with the CHIS, however, responses were coded using the traditional zero-to-four scale (i.e., "None of the time" to "All of the time"). Refused and "I don't know" answers were treated as missing in our analysis and excluded from the sample.

As in our CHIS analysis, we used these questions to construct a K6 score for each respondent, which was then used to generate variables indicating whether a respondent suffered from serious or moderate mental distress. This was done using the same cutoff criteria discussed in the previous section.

Weighting

When conducting statistical analysis, we used the person-level weights included in the NHIS, which represent the inverse probability of an individual being selected for the questioning. This accounts for the NHIS's complex survey design.

Statistical Inference

Using the weights described above, we conducted tests for statistical significance for both the binary outcome variables (serious or moderate mental distress) and the continuous outcome measures (respondents' calculated K6 scores). Wald tests were performed after calculating the proportion or mean of the mental distress indicators or K6 scores, respectively.

Methods for Analysis of WCIS

Workers' compensation claims may be denied for different reasons at various points in the application process (described in detail in Chapter 4). Denials are broadly categorized into two groups: denial on the FROI and denial on the SROI. The key difference between these two types of denials is related to whether any indemnity benefits are paid out to the applicant.

Denial on an FROI occurs when a claims adjuster determines, through an initial investigation, that the injury is not work-related. As a result, no indemnity benefits are paid, unless the denial is possibly reversed on appeal (also described in Chapter 4).

When a claims adjuster denies a claim on an SROI, this implies that the applicant received indemnity benefits at one point, as their claim was initially accepted.

Rather than analyzing all WCIS data extracted for this study, we focused on claims sourced from the most reliably accurate claims administrators—that is, those administrators who include complete information about the individual filing the claim and the nature of the injury when submitting to the WCIS. Our final results were weighted to reflect an accurate representation of all claims submitted without errors or omissions.

To identify these good claims administrators, we calculated the percentage of FROI submitted by each administrator that was reported to have paid indemnity benefits. Typically, around 30 percent of workers' compensation claims in California receive indemnity benefits. In the WCIS data, a number of claims administrators (including some with tens of thousands of claims) never reported paid indemnity benefits. After examining the distribution of claims with indemnity benefits, we set 15 percent as a minimum cutoff. In past research, we have experimented with thresholds ranging from 10 percent to 20 percent. We have also used definitions based on the percentage of FROI with one or more SROI reported. We have found, however, that estimates are not very sensitive to where we set this cut point: the most important thing is to exclude claims administrators who never report SROI or indemnity benefits, since these claims administrators will bias downward estimates of costs and the frequency of indemnity benefits.

Our study differentiated among three different types of claims administrators: (1) fully insured; (2) self-insured, third-party administered; and (3) self-insured, self-administered. In the empirical work, indicator variables were created using the following logic: An individual was considered to be fully insured if they were *not* self-insured, as defined by an indicator variable sourced directly from the WCIS. After differentiating between these two insurance statuses, we then further segmented the self-insured individuals using an individual's Federal Employer Identification Number. If this number was the same for both the injured party and the claims administrator, we defined the claim as self-administered. Finally, a claim was considered administered by a third party if an individual was self-insured (again defined by an indicator sourced from WCIS) but their claim was not self-administered, as defined above.

Table C.1 explicitly defines the key outcome variables used in our analysis of the WCIS data, as defined by benefit type codes, which are used by claims administrators to differentiate between benefits paid out for different injury classifications.

Table C.1. Benefit Category Variables and Corresponding Benefit Type Codes (BTC)

Variable	BTC	Code/Compromised Payment Code Description
Temporary Disability (TD)		
	050	Temporary Total
	070	Temporary Partial
Permanent Disability (PD)		
	020	Permanent Total
	030	Permanent Partial Scheduled
	040	Permanent Partial Unscheduled
	090	Permanent Partial Disfigurement
Death		
	010	Fatal
Nonmedical Settlements		
	500	Unspecified
	510	Fatal
	520	Compromised Permanent Total
	530	Compromised Permanent Partial Scheduled
	540	Compromised Permanent Partial Unscheduled
	550	Compromised Temporary Total
	570	Compromised Temporary Partial
	590	Compromised Payment Partial Disfigurement
	524	Compromised Employer Paid
Any Indemnity		
	010	Death
	050	Temporary Total
	070	Temporary Partial
	240	Employer Paid
	500	Unspecified
	510	Fatal
	520	Compromised Permanent Total
	530	Compromised Permanent Partial Scheduled
	540	Compromised Permanent Partial Unscheduled
	550	Compromised Temporary Total
	570	Compromised Temporary Partial
	590	Compromised Payment Partial Disfigurement
	524	Compromised Employer Paid

When analyzing initial injury conditions covered by presumption, we classified the nature of the injury into four broad categories: physical only, mental only, mental and physical, and cumulative (not otherwise defined). Below, these categories are defined in terms of the official nature-of-injury codes used in the workers' compensation system.

- **Physical only—**This category includes all claims in which the initial injury reported is one of the following: dust disease, not otherwise classified (nature-of-injury code 60); asbestosis (nature-of-injury code 61); black lung (nature-of-injury code 62); byssinosis (nature-of-injury code 63); silicosis (nature-of-injury code 64); respiratory disorders (nature-of-injury code 65); poisoning—chemical, other than metals (nature-of-injury code 66); poisoning—metal (nature-of-injury code 67); dermatitis (nature-of-injury code 68); radiation (nature-of-injury code 70); all other occupational disease injuries, not otherwise classified (nature-of-injury code 71); loss of hearing (nature-of-injury code 72); contagious disease (nature-of-injury code 73); cancer (nature-of-injury code 74); AIDS (nature-of-injury code 75); VDT—related diseases (nature-of-injury code 76); carpal tunnel syndrome (nature-of-injury code 78); hepatitis C (nature-of-injury code 79); COVID-19 (nature-of-injury code 90).
- **Mental only—**This category includes all claims in which the initial injury reported is either mental stress (nature-of-injury code 77) or mental disorder (nature-of-injury code 69).
- **Mental and physical—**This category includes all claims in which the initial injury reported consists of multiple injuries, including those that are both physical and psychological (nature-of-injury code 91).
- **Cumulative, not otherwise defined**—This category includes all claims in which the initial injury reported consists of all other cumulative injuries, not otherwise classified (nature-of-injury code 80).

Supplementary Results for Chapter 3

Table C.2 reports CHIS estimates of the prevalence of mental distress, by occupation and stratified by age and gender.

Table C.3 reports CHIS estimates of suicidality, stratified by age and gender.

Table C.4 reports NHIS estimates of serious mental distress prevalence, by occupation. Note that the occupation codes available on the public-use NHIS are Census Occupation Codes rather than SOC codes and are thus less detailed than the occupation codes used in our analysis of the CHIS.

Table C.2. Prevalence of Serious or Moderate Mental Distress by Occupation, Gender, and Age, 2013–2019 CHIS

Occupation Group	First Responders and Comparison Groups		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				All Workers
Occupation	First Responders	First Responder Comparators	Firefighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
Serious Psychological Distress (K6 > 12), by Gender										
Females	0.0%	2.6%	0.0%	2.9%	10.1%	0.0%	2.7%	10.1%	0.0%	4.2%
Males	1.5%	2.0%	1.3%	2.2%	0.3%	1.6%	2.0%	4.7%	0.0%	3.0%
N Total (unweighted)	479	5,761	136	3,065	75	343	4,235	372	124	73,936
Serious Psychological Distress (K6 > 12), by Age										
19–39	0.4%	2.9%	0.3%	2.5%	4.1%	0.5%	3.0%	6.3%	0.0%	4.7%
40–49	0.5%	2.4%	0.0%	3.1%	4.9%	0.7%	2.9%	4.6%	0.0%	2.9%
50–64	5.1%	1.1%	5.4%	1.4%	2.5%	5.0%	0.8%	4.4%	0.0%	2.3%
65+	0.0%	0.7%	0.0%	0.2%	0.0%	0.0%	0.8%	0.0%	0.0%	1.8%
N Total (Unweighted)	479	5,761	136	3,065	75	343	4,235	372	124	73,936

Table C.3. Prevalence of Serious or Moderate Mental Distress by Occupation, Gender, and Age, 2013–2019 CHIS

Occupation Group	First Responders and Comparison Groups		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				All Workers
Occupation	First Responders	First Responder Comparators	Firefighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
% Ever Thought About Suicide, by Gender										
Females	7.8%	11.0%	0.0%	12.9%	17.4%	8.1%	11.1%	4.0%	15.6%	11.3%
Males	3.7%	9.0%	2.7%	9.1%	20.1%	4.2%	9.9%	13.6%	4.9%	10.0%
N Total (Unweighted)	479	5,761	136	3,065	75	343	4,235	372	124	73,936
% Ever Thought About Suicide, by Age										
19–39	3.8%	12.5%	3.7%	11.7%	21.3%	3.8%	13.5%	18.4%	4.9%	13.8%
40–49	5.3%	9.2%	2.4%	9.5%	0.1%	6.1%	10.2%	4.5%	13.3%	8.4%
50–64	2.7%	6.2%	0.0%	7.4%	9.1%	3.8%	6.9%	4.7%	6.6%	7.2%
65+	26.2%	3.9%	0.0%	4.7%	0.0%	26.9%	3.3%	1.4%	0.0%	6.0%
N Total (Unweighted)	479	5,761	136	3,065	75	343	4,235	372	124	73,936

Table C.4. Prevalence of Serious Mental Distress by Occupation, 2004–2018 NHIS

Occupation Group	Firefighters and Comparison Groups			Peace Officers and Comparison Groups		
Occupation	**Firefighters**	**Firefighter Comparators**	**Health Technologists and Technicians**	**Peace Officers**	**Peace Officer Comparators**	**Other Protective Services**
Serious Psychological Distress (K6 > 12)	1.1%	2.0%*	2.6%**	0.8%	1.8%***	3.3%***
Moderate Psychological Distress (5 < K6 ≤ 12)	7.2%	16.1%***	14.6%***	9.0%	14.0%***	17.3%***
Mean K6 Score	1.2	2.1***	2.4***	1.4	2.1***	2.6***
N Total (Unweighted)	484	55,086	4,460	2,141	66,805	2,280

NOTES: Estimates from the 2004–2018 NHIS, accessed via IPUMS (Blewett et al., 2019). Firefighter and peace officer comparators are defined to include all 2000 SOC subgroups containing the detailed occupations listed in Table D.1. The occupation code "Health Technologists and Technicians" contains EMTs. The occupation code "Other Protective Services" contains security guards.

* $p < 0.10$

** $p < 0.05$

*** $p < 0.01$

Supplementary Results for Chapter 4

Table C.5. Proportion of Claims Ever Denied (Any Final Disposition) by Involvement of PTSD, Anxiety/Trauma Disorders, or Other Presumption Conditions, by First Responder Occupation and Type of Claims Administrator

Occupation	First Responders			Firefighters			Peace Officers		
Claims Administrator Type	**Self-Insured, TPA**	**Self-Insured, Self-Administered**	**Total**	**Self-Insured, TPA**	**Self-Insured, Self-Administered**	**Total**	**Self-Insured, TPA**	**Self-Insured, Self-Administered**	**Total**
Claims with Mental Health Conditions									
PTSD	37.4%	26.1%	30.2%	41.0%	23.2%	31.2%	36.5%	28.8%	33.6%
N (Unweighted)	571	305	904	124	125	258	449	180	648
Anxiety/Trauma Disorders	43.5%	24.2%	35.4%	37.7%	25.3%	31.7%	45.3%	23.6%	36.9%
N (Unweighted)	1,170	819	2,056	238	236	494	935	583	1,565

Occupation	First Responders			Firefighters			Peace Officers		
Claims Administrator Type	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total
Nonpsychotic Mental Disorders	41.9%	21.7%	33.1%	38.5%	23.4%	31.0%	43.1%	20.9%	33.9%
N (Unweighted)	1,823	1,346	3,275	389	382	799	1,438	964	2,480
Other Presumption Conditions									
Cancer	39.2%	20.2%	27.2%	40.3%	14.8%	21.9%	38.7%	25.0%	30.8%
Exposure to a Biochemical Substance	NA (No Observations)	NA (No Observations)	NA (No Observations)	NA (No Observations)	NA (No Observations)	NA (No Observations)	NA (No Observations)	NA (No Observations)	NA (No Observations)
Heart Trouble	43.9%	17.4%	28.5%	44.4%	15.0%	24.3%	43.6%	19.3%	31.0%
Hernia	16.2%	8.9%	11.5%	10.4%	9.3%	9.5%	18.9%	8.6%	12.8%
Lower Back Impairments	16.3%	6.0%	10.0%	12.4%	4.4%	6.8%	17.6%	6.8%	11.4%
MRSA	31.4%	2.9%	5.6%	26.6%	0.0%	2.4%	35.5%	5.7%	8.8%
Pneumonia	20.9%	6.6%	12.8%	18.2%	6.6%	11.7%	22.6%	6.7%	13.5%
Other Infectious Diseases (Lyme, Meningitis, TB)	45.7%	10.6%	31.2%	57.4%	8.9%	36.3%	38.5%	11.6%	27.8%
Total (All Other Presumption Conditions)	22.6%	8.8%	14.2%	20.9%	7.6%	11.7%	23.2%	9.5%	15.4%
N (Unweighted)	10,242	15,480	26,337	2,289	5,308	7,786	7,986	10,172	18,587

Table C.6. Initially Reported Nature of Injury by Involvement of Anxiety/Trauma Disorders, by Occupation

Occupation Group	First Responders and Comparison Groups		Firefighters and Comparison Groups			Peace Officers and Comparison Groups				All Workers
Occupation	First Responders	First Responder Comparators	Firefighters	Firefighter Comparators	Ambulance Drivers and EMTs	Peace Officers	Peace Officer Comparators	Security Guards	Correctional Officers	All Workers
Anxiety/Trauma Disorders										
Physical Only	51.1%	55.9%	50.8%	70.7%	62.1%	51.3%	48.5%	65.5%	44.7%	57.1%
Mental Only	32.0%	32.4%	32.2%	20.0%	29.8%	31.9%	38.7%	25.7%	37.2%	30.7%
Mental + Physical	2.3%	2.0%	3.5%	1.6%	1.1%	1.8%	2.2%	3.1%	1.0%	3.1%
Cumulative, Not Otherwise Classified	14.6%	9.8%	13.5%	7.6%	7.0%	15.0%	10.6%	5.8%	17.1%	9.1%
N (Unweighted)	2,056	7,393	494	3,020	145	1,565	5,171	1,203	1,866	75,244
Other Claims (Without PTSD or Other Anxiety /Trauma Disorders)										
Physical Only	92.9%	93.8%	95.5%	96.1%	97.6%	91.8%	91.9%	95.0%	83.5%	94.3%
Mental Only	0.4%	0.6%	0.3%	0.3%	0.2%	0.5%	1.0%	0.9%	1.3%	0.7%
Mental + Physical	0.1%	0.2%	0.1%	0.2%	0.1%	0.2%	0.3%	0.5%	0.1%	0.4%
Cumulative, Not Otherwise Classified	6.5%	5.3%	4.1%	3.3%	2.1%	7.5%	6.9%	3.6%	15.2%	4.6%
N (Unweighted)	113,291	277,718	32,098	165,814	10,239	81,401	147,794	29,616	36,044	2,855,679
Total										
Physical Only	92.2%	92.9%	94.8%	95.7%	97.1%	91.1%	90.5%	93.9%	81.7%	93.4%
Mental Only	1.0%	1.4%	0.8%	0.6%	0.6%	1.0%	2.2%	1.8%	2.9%	1.4%
Mental + Physical	0.2%	0.3%	0.2%	0.3%	0.1%	0.2%	0.3%	0.6%	0.1%	0.4%
Cumulative, Not Otherwise Classified	6.7%	5.4%	4.3%	3.4%	2.1%	7.7%	7.0%	3.6%	15.2%	4.7%
N (Unweighted)	115,347	285,111	32,592	168,834	10,384	82,966	152,965	30,819	37,910	2,930,923

NOTES: Authors' calculations, 2008–2019 WCIS. Sample is limited to observations for which there are valid occupation codes and for which workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of the total FROI submissions and has complete medical bill data.

Table C.7. Medical Bill Counts, Charges, Denials, and Payments for First Responders with Claims Involving Anxiety/Trauma Disorders, by Occupation and Type of Claims Administrator

	First Responders			Firefighters			Peace Officers		
	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total
Claims Involving Anxiety/Trauma Disorders									
All Medical Bills									
Mean Count of Bills Submitted at 24 Months, Any Diagnosis	27.9	24.2	26.3	28.9	23.5	26.2	27.5	24.5	26.3
Mean Count of Bills Denied at 24 Months, Any Diagnosis	6.2	8.1	6.9	6.3	7.9	7.1	6.1	8.2	6.9
Mean % of Bills Denied at 24 Months, Any Diagnosis	21.2%	36.9%	27.7%	20.6%	36.4%	28.3%	21.3%	37.2%	27.4%
Mean Count of Denied Bills as % of Mean Bill Count, Any Diagnosis	22.1%	33.4%	26.4%	21.8%	33.7%	26.9%	22.2%	33.3%	26.1%
Mean Charges Submitted at 24 Months, Any Diagnosis	$29,021	$31,167	$29,669	$31,730	$24,777	$28,101	$28,117	$34,291	$30,204
Mean Charges on Denied Bills at 24 Months, Any Diagnosis	$4,024	$14,127	$8,174	$4,086	$8,739	$6,293	$3,991	$16,761	$8,857
Mean % of Charges Denied at 24 Months, Any Diagnosis	10.4%	23.5%	15.7%	9.2%	27.4%	18.0%	10.7%	21.5%	14.8%
Mean Charges on Denied Bills as % of Mean Charges, Any Diagnosis	13.9%	45.3%	27.6%	12.9%	35.3%	22.4%	14.2%	48.9%	29.3%
Mean Paid Amount at 24 Months, Any Diagnosis	$10,708	$8,498	$9,824	$11,942	$9,261	$10,630	$10,311	$8,125	$9,514
Mean Paid Amount as % of Mean Charges, Any Diagnosis	36.9%	27.3%	33.1%	37.6%	37.4%	37.8%	36.7%	23.7%	31.5%

	First Responders			Firefighters			Peace Officers		
	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total
Medical Bills with Mental Health Diagnoses Present									
Mean Count of Bills Submitted at 24 Months, Mental Health Diagnosis	4.47	3.25	3.97	4.49	3.80	4.16	4.45	2.99	3.89
Mean Count of Bills Denied at 24 Months, Mental Health Diagnosis on Bills (Intermediate Definition)	0.8	1.0	0.9	0.7	1.4	1.0	0.8	0.8	0.8
% of Bills Denied at 24 Months, Mental Health Diagnosis on Bills (Intermediate Definition)	18.9%	34.0%	25.1%	17.6%	36.3%	27.1%	19.1%	32.7%	24.3%
Mean Count of Denied Bills as % of Mean Bill Count, Mental Health Diagnosis on Bills (Intermediate Definition)	17.3%	30.1%	21.7%	16.0%	35.7%	24.7%	17.6%	26.7%	20.5%
Mental Health Diagnosis on Bills (Intermediate Definition)	$3,198	$2,291	$2,830	$3,577	$3,209	$3,402	$3,080	$1,842	$2,616
Mean Charges on Denied Bills at 24 Months, Mental Health Diagnosis on Bills (Intermediate Definition)	$301	$541	$396	$245	$926	$575	$316	$352	$329
% of Charges Denied at 24 Months, Mental Health Diagnosis on Bills (Intermediate Definition)	9.5%	21.5%	14.2%	8.9%	26.2%	17.6%	9.6%	18.9%	12.9%
Mean Charges on Denied Bills as % of Mean Charges, Mental Health Diagnosis	9.4%	23.6%	14.0%	6.9%	28.9%	16.9%	10.3%	19.1%	12.6%
Mean Paid Amount at 24 Months, Mental Health Diagnosis on Bills (Intermediate Definition)	$2,377	$1,515	$2,032	$2,802	$1,996	$2,418	$2,246	$1,280	$1,889
Mean Paid Amount as % of Mean Charges, Mental Health Diagnosis	74%	66%	72%	78%	62%	71%	73%	69%	72%
N Injured Workers (Unweighted)	1170	819	2056	238	236	494	935	583	1565

	First Responders			Firefighters			Peace Officers		
	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total	Self-Insured, TPA	Self-Insured, Self-Administered	Total
Claims Without Anxiety/Trauma Disorders									
All Medical Bills									
Mean Count of Bills Submitted at 24 Months, Any Diagnosis	11.2	12.1	11.7	9.3	12.5	11.2	11.9	12.0	12.0
Mean Count of Bills Denied at 24 Months, Any Diagnosis	2.4	3.9	3.2	2.1	4.1	3.3	2.5	3.8	3.2
% of Bills Denied at 24 Months, Any Diagnosis	23.8%	33.4%	29.2%	26.1%	33.2%	30.2%	22.8%	33.5%	28.7%
Mean Count of Denied Bills as % of Mean Bill Count, Any Diagnosis									
Mean Charges Submitted at 24 Months, Any Diagnosis	$8,929	$10,023	$9,540	$7,918	$11,245	$9,861	$9,291	$9,481	$9,389
Mean Charges on Denied Bills at 24 Months, Any Diagnosis	$1,679	$3,016	$2,444	$1,605	$3,338	$2,612	$1,700	$2,872	$2,367
% of Charges Denied at 24 Months, Any Diagnosis	9.2%	17.9%	14.2%	9.4%	17.6%	14.2%	9.1%	18.0%	14.1%
Mean Charges on Denied Bills as % of Mean Charges	18.8%	30.1%	25.6%	20.3%	29.7%	26.5%	18.3%	30.3%	25.2%
Mean Paid Amount at 24 Months, Any Diagnosis	$3,178	$3,315	$3,244	$2,901	$3,699	$3,359	$3,282	$3,144	$3,193
Mean Paid Amount as % of Mean Charges, Mental Health Diagnosis	35.6%	33.1%	34.0%	36.6%	32.9%	34.1%	35.3%	33.2%	34.0%
N (Unweighted)	42,333	67,714	113,291	11,133	19,920	32,098	31,362	47,794	81,401

NOTES: Authors' calculations, 2008–2019 WCIS. Sample is limited to observations for which there are valid occupation codes and for which workers' compensation data is sourced from a claims administrator who reports indemnity benefits on at least 15 percent of the total FROI submissions and has complete medical bill data.

Table C.8. Paid Indemnity and Medical Benefit Costs for First Responder Claims Involving PTSD, by Benefit Type

	First Responders			Firefighters			Peace Officers		
Claim Initially Denied?	N	Y	Total	N	Y	Total	N	Y	Total
Indemnity Costs									
Temporary Disability (Including 4850 Pay)	$30,877	$15,769	$26,975	$26,244	$10,288	$22,485	$33,369	$18,505	$29,318
Permanent Disability	$10,347	$6,122	$9,256	$9,658	$4,935	$8,546	$10,717	$6,582	$9,590
Death	$270	$0	$200	$773	$0	$591	$0	$0	$0
Nonmedical Settlements	$10,455	$11,702	$10,777	$5,525	$18,017	$8,468	$13,107	$8,756	$11,921
Total Indemnity + Nonmedical Settlements	$51,950	$33,594	$47,209	$42,200	$33,240	$40,089	$57,192	$33,843	$50,830
Medical (24 Months) + Medical Settlements	$17,644	$10,659	$15,840	$21,264	$10,348	$18,692	$15,697	$10,750	$14,349
Total Paid Benefits	$69,593	$44,252	$63,049	$63,464	$43,588	$58,781	$72,889	$44,593	$65,179
N (Unweighted)	680	224	904	199	59	258	479	167	646

NOTES: Average paid indemnity and medical benefits for first responder claims involving PTSD, with injury dates between 2008 and 2019. Dollar amounts are inflated to real 2020 dollars using the CPI-U. Paid medical bill amounts include care provided within two years (24 months) of the earliest service date for care billed to workers' compensation. Totals may not sum due to rounding.

Table C.9. Paid Indemnity and Medical Benefit Costs for First Responder Claims Involving PTSD (Mental Health Nature-of-Injury Only), by Type of Benefit

	First Responders			Firefighters			Peace Officers		
Claim Initially Denied?	N	Y	Total	N	Y	Total	N	Y	Total
Indemnity Costs									
Temporary Disability (Including 4850 Pay)	$34,991	$18,432	$29,411	$35,475	$13,308	$29,998	$34,662	$20,248	$29,085
Permanent Disability	$6,700	$4,256	$5,876	$4,448	$7,028	$5,086	$8,234	$3,273	$6,315
Death	$0	$0	$0	$0	$0	$0	$0	$0	$0
Nonmedical Settlements	$7,618	$6,930	$7,386	$6,567	$9,560	$7,306	$8,335	$5,998	$7,431
Total Indemnity + Nonmedical Settlements	$49,309	$29,618	$42,673	$46,490	$29,896	$42,390	$51,231	$29,520	$42,831
Medical (24 Months) + Medical Settlements	$16,887	$8,843	$14,176	$23,377	$9,362	$19,914	$12,465	$8,660	$10,993
Total Paid Benefits	$66,196	$38,462	$56,850	$69,867	$62,303	$62,303	$63,696	$38,179	$53,824
N (Unweighted)	234	105	339	77	25	102	157	80	237

NOTES: Average paid indemnity and medical benefits for first responder claims involving PTSD, with injury dates between 2008 and 2019. Dollar amounts are inflated to real 2020 dollars using the CPI-U. Paid medical bill amounts include care provided within two years (24 months) of the earliest service date for care billed to workers' compensation. Totals may not sum due to rounding.

Appendix D. Comparison Occupations and O*Net Work Context Measures

As discussed in Chapter 2, we used survey data on working conditions and job demands from the Occupational Information Network (O*Net) program to select occupations to compare with peace officers and firefighters. To identify these occupations in our other data sources, we had to crosswalk job titles from the six-digit SOC codes used in the O*Net to the Census Occupation codes. This was done by consulting the Bureau of Labor Statistics 2010 Occupational Classification, available online (U.S. Bureau of Labor Statistics, 2016). Table D.1 presents SOC occupation titles and codes as well as Census occupation titles and codes for each occupation considered in our study.

This complete list of occupation titles and codes is contained in Table 2.4. Please see Chapter 2 of this report for discussion of how these codes were used in our analysis.

Table D.1. Full Occupation List for First Responders and Comparator Occupations (Titles and Occupation Codes)

Occupational Group (as used in this report)	SOC Occupation Titles	SOC Codes	Census Occupation Titles	Census Occupation Codes
First Responders	firefighters; first-line supervisors of firefighting and prevention workers; first-line supervisors of police and detectives; police and sheriff's patrol officers; detectives and criminal investigators	33-2011, 33-1021, 33-1012, 33-3051, 33-3021	firefighters; first-line supervisors of firefighting and prevention workers; first-line supervisors of police and detectives; police and sheriff's patrol officers; detectives and criminal investigators	3740, 3720, 3710, 3850, 3820
Firefighters	firefighters; first-line supervisors of firefighting and prevention workers	33-2011, 33-1021	firefighters; first-line supervisors of firefighting and prevention workers	3740, 3720
Peace Officers	first-line supervisors of police and detectives; police and sheriff's patrol officers; detectives and criminal investigators	33-1012, 33-3051, 33-3021	first-line supervisors of police and detectives; police and sheriff's patrol officers; detectives and criminal investigators	3710, 3850, 3820
First Responder Comparison Occupations	fire inspectors; emergency medical technicians and paramedics; control and valve installers and repairers, except mechanical door; telecommunications line installers and repairers; first-line supervisors of construction trades and extraction workers; electrical and electronics repairers, powerhouse, substation, and relay; commercial divers; captains, mates, and pilots of water vessels; miscellaneous life, physical, and social science technicians; construction and related workers, all other; septic tank	33-2020, 29-2040, 49-9012, 49-9052, 51-8099, 47-1011, 49-2095, 49-9092, 53-5021, 19-4090, 47-4099, 47-4071, 17-2111, 33-3031, 49-9044, 53-2012, 49-9081, 49-9021, 49-9096, 47-4041, 47-2111, 47-2121, 49-9071, 49-9097, 53-3011, 49-1011, 37-1012, 47-4021, 47-2031, 47-2152, 49-2022, 47-2011, 53-7121, 17-3029, 49-9099, 47-4051, 47-5013, 53-7071, 13-1041, 53-1000, 33-9011, 53-2022, 33-1011, 11-9199, 39-4031, 33-3012, 45-4011, 17-1022, 53-6051, 45-1011, 49-2098, 47-4011, 45-2011, 19-4012, 17-3031, 11-3071, 13-1199,	fire inspectors; emergency medical technicians and paramedics; control and valve installers and repairers; telecommunications line installers and repairers; water and wastewater treatment plant and system operators; first-line supervisors of construction trades and extraction workers; electrical and electronics repairers; industrial and utility; commercial divers; ship and boat captains and operators; miscellaneous life, physical, and social science technicians; miscellaneous construction and related	3740, 3720, 3710, 3750, 3850, 3820, 3400, 7300, 7420, 8630, 6200, 7100, 7520, 9310, 1965, 6765, 6750, 1430, 3830, 7360, 3540, 9030, 7440, 7315, 7560, 6720, 6355, 7600, 9110, 6360, 7340, 7000, 4210, 6230, 6700, 6440, 7020, 6210, 9740, 1550, 7630, 6730, 6800, 9650, 0565, 9000, 3900, 9040, 3700, 0430, 4465, 3800, 6120, 1310, 1640, 5510, 0140, 9410, 6005, 7130, 6660, 6010, 1900, 1560, 0160, 0740

Occupational Group (as used in this report)	SOC Occupation Titles	SOC Codes	Census Occupation Titles	Census Occupation Codes
	servicers and sewer pipe cleaners; health and safety engineers, except mining safety engineers and inspectors; fish and game wardens; millwrights; commercial pilots; wind-turbine service technicians; heating, air-conditioning, and refrigeration mechanics and installers; riggers; hazardous materials removal workers; electricians; glaziers; maintenance and repair workers; general; signal and track switch repairers; ambulance drivers and attendants, except emergency medical technicians; first-line supervisors of mechanics, installers, and repairers; first-line supervisors of landscaping, lawn service, and groundskeeping workers; elevator and escalator installers and repairers; carpenters; plumbers; pipefitters, and steamfitters; telecommunications equipment installers and repairers, except line installers; boilermakers; tank car, truck, and ship loaders; installation, maintenance, and repair workers, all other; highway maintenance workers; service unit operators; oil and gas, gas	43-5021, 11-3051, 19-1031, 33-2022, 29-2042, 29-2043, 47-1010, 47-1000, 19-4070, 19-4071, 47-4070, 33-3030, 49-9080, 49-9080, 49-9020, 47-4040, 47-2110, 47-2120, 47-2030, 47-2010, 53-7120, 47-4050, 13-1040, 53-1041, 33-9010, 39-4030, 45-4010, 45-2010, 19-4012, 17-3030, 11-3070, 43-5020, 11-3050, 33-3010, 33-3011	workers; septic tank servicers and sewer pipe cleaners; industrial engineers, including health and safety; fish and game wardens; millwrights; other health care practitioners and technical occupations; aircraft pilots and flight engineers; wind-turbine service technicians; heating, air-conditioning, and refrigeration mechanics and installers; riggers; hazardous materials removal workers; electricians; signal and track switch repairers; ambulance drivers and attendants, except emergency medical technicians; glaziers; maintenance and repair workers, general; computer, automated teller, and office machine repairers; first-line supervisors of landscaping, lawn service, and groundskeeping workers; carpenters; elevator installers and repairers; pipelayers, plumbers, pipefitters, and steamfitters; radio and telecommunications equipment installers and repairers; boilermakers; tank car, truck, and ship loaders; engineering technicians, except drafters; other installation, maintenance, and repair workers; highway maintenance workers; derrick,	

Occupational Group (as used in this report)	SOC Occupation Titles	SOC Codes	Census Occupation Titles	Census Occupation Codes
	compressor, and gas-pumping station operators; compliance officers; animal control workers; airfield operations specialists; first-line supervisors of correctional officers; managers, all other; morticians, undertakers, and funeral arrangers; correctional officers and jailers; forest and conservation workers; surveyors; transportation inspectors; first-line supervisors of farming, fishing, and forestry workers; security and fire-alarm systems installers; construction and building inspectors; agricultural inspectors; agricultural technicians; surveying and mapping technicians; transportation, storage, and distribution managers; business operations specialists, all other; couriers and messengers; industrial production managers; conservation scientists; forest-fire inspectors and prevention specialists; emergency medical technicians; paramedics; forest and conservation technicians; aircraft cargo handling supervisors; bailiffs, correctional officers; and jailers, bailiffs		rotary drill, and service unit operators; oil, gas, and mining; pumping station operators; compliance officers; supervisors of transportation and material moving workers; animal control workers; air traffic controllers and airfield operations specialists, managers, all other; morticians, undertakers, and funeral directors; forest and conservation workers; surveyors, cartographers, and photogrammetrists; conservation scientists and foresters; couriers and messengers; training and development managers; transportation inspectors; first-line supervisors of farming, fishing, and forestry workers; security and fire-alarm systems installers; construction and building inspectors; agricultural inspectors; agricultural and food science technicians; surveying and mapping technicians; transportation, storage, and distribution managers; business operations specialists; all other	

Occupational Group (as used in this report)	SOC Occupation Titles	SOC Codes	Census Occupation Titles	Census Occupation Codes
Firefighter Comparison Occupations	fire inspectors; control and valve installers and repairers; telecommunications line installers and repairers; misc. plant and system operators; first-line supervisors of construction trades and extraction workers; electrical and electronics repairers; powerhouse, substation, and relay; commercial drivers; captains, mates, and pilots of water vessels; misc. life, physical, and social science technicians; construction and related workers, all other; septic tank servicers and sewer pipe cleaners; health and safety engineers, except mining safety engineers and inspectors; fish and game wardens; millwrights; commercial pilots; wind-turbine service technicians; heating, air-conditioning, and refrigeration mechanics and installers; riggers; hazardous materials removal workers; electricians; signal and track switch repairers; ambulance drivers and attendants, except emergency medical technicians; glaziers; maintenance and repair workers, general; first-line supervisors of mechanics, installers, and repairers;	33-2020, 49-9010, 49-9052, 47-1011, 49-2095, 49-9092, 53-5021, 19-4090, 47-4099, 47-4071, 17-2111, 33-3031, 49-9044, 53-2012, 49-9081, 49-9021, 49-9096, 47-4041, 47-2111, 49-9097, 53-3011, 47-2121, 49-9071, 49-1011, 37-1012, 47-2031, 47-4021, 47-2152, 49-2022, 47-2011, 53-7121, 17-3029, 49-9099, 47-4051, 47-5013, 53-7071, 13-1041, 53-1000, 29-2042, 29-2043, 49-9011, 49-9012, 51-8092, 51-8093, 51-8099, 53-1041	fire inspectors; emergency medical technicians and paramedics; control and valve installers and repairers; telecommunications line installers and repairers; miscellaneous plant and system operators; first-line supervisors of construction trades and extraction workers; electrical and electronics repairers, industrial and utility, commercial divers; ship and boat captains and operators; miscellaneous life, physical, and social science technicians; miscellaneous construction and related workers; septic tank servicers and sewer pipe cleaners; industrial engineers, including health and safety; fish and game wardens; millwrights; other health care practitioners and technical occupations; aircraft pilots and flight engineers; wind-turbine service technicians; heating, air-conditioning, and refrigeration mechanics and installers; riggers; hazardous materials removal workers; electricians; signal and track switch repairers; ambulance drivers and attendants, except emergency medical technicians; glaziers;	3750, 3400, 7300, 7420, 8630, 6200, 7100, 7520, 9310, 1965, 6765, 6750, 1430, 3830, 7360, 3540, 9030, 7440, 7315, 7560, 6720, 6355, 7600, 9110, 6360, 7340, 7000, 4210, 6230, 6700, 6440, 7020, 6210, 9740, 1550, 7630, 6730, 6800, 9650, 0565, 9000

Occupational Group (as used in this report)	SOC Occupation Titles	SOC Codes	Census Occupation Titles	Census Occupation Codes
	first-line supervisors of landscaping, lawn service, and groundskeeping workers; carpenters; elevator and escalator installers and repairers; plumbers, pipefitters, and steamfitters; telecommunications equipment installers and repairers, except line installers; boilermakers; tank car, truck, and ship loaders; engineering technologists and technicians, except drafters, all other; installation, maintenance, and repair workers, all other; highway maintenance workers; service unit operators; oil and gas, gas compressor, and gas-pumping station operators; compliance officers; supervisors of transportation and material moving workers; emergency medical technicians; paramedics; mechanical door repairers; control and valve installers and repairers, except mechanical door; gas plant operators; petroleum pump system operators; refinery operators and gaugers; plant and system operators, all other; aircraft cargo handling supervisors		maintenance and repair workers, general; first-line supervisors of mechanics, installers, and repairers; first-line supervisors of landscaping, lawn service, and groundskeeping workers; carpenters; elevator installers and repairers; pipelayers, plumbers, pipefitters, and steamfitters; radio and telecommunications equipment installers and repairers; boilermakers; tank car, truck, and ship loaders; engineering technicians, except drafters; other installation, maintenance, and repair workers; highway maintenance workers, derrick, rotary drill, and service unit operators; oil, gas, and mining; pumping station operators; compliance officers; supervisors of transportation and material moving workers	

Occupational Group (as used in this report)	SOC Occupation Titles	SOC Codes	Census Occupation Titles	Census Occupation Codes
Ambulance Drivers and EMTs	emergency medical technicians and paramedics; emergency medical technicians; paramedics, ambulance drivers, and attendants, except emergency medical technicians	29-2040, 29-2042, 29-2043, 53-3011	emergency medical technicians and paramedics; ambulance drivers and attendants, except emergency medical technicians	3400, 9110,
Peace Officer Comparison Occupations	fire inspectors; animal control workers; emergency medical technicians; fish and game wardens; compliance officers; airfield operations specialists; ambulance drivers and attendants, except emergency medical technicians; first-line supervisors of correctional officers; managers, all other; first-line supervisors of mechanics, installers, and repairers; miscellaneous life, physical, and social science technicians; occupational health and safety specialists; morticians, undertakers, and funeral arrangers; health and safety engineers, except mining safety engineers and inspectors; segmental pavers; correctional officers and jailers; forest and conservation workers; surveyors; commercial pilots; telecommunications equipment installers and repairers, except line installers; control and valve installers and repairers,	33-2020, 33-9011, 29-2042, 33-3031, 13-1041, 53-2022, 53-3011, 33-1011, 11-9199, 49-1011, 19-4090, 19-5011, 39-4031, 33-3012, 47-4091, 17-2111, 45-4011, 17-1022, 53-2012, 49-2022, 49-9012, 19-1031, 17-3025, 43-5021, 11-3051, 53-6051, 45-1011, 49-2098, 53-5021, 47-4011, 45-2011, 19-4012, 17-3031, 37-1012, 11-3071, 47-1011, 13-1199, 33-1010, 33-2021, 33-9010, 29-2040, 29-2043, 33-3030, 13-1040, 53-3010, 49-1010, 19-4070, 19-4071, 39-4030, 33-3010, 45-4010, 43-5020, 11-3050, 53-6050, 45-1010, 47-4010, 45-2010, 19-4012, 17-3030, 11-3070, 47-1010, 33-3011, 33-3012	fire inspectors; animal control workers; emergency medical technicians and paramedics; fish and game wardens compliance officers; air traffic controllers and airfield operations specialists; ambulance drivers and attendants, except emergency medical technicians; first-line supervisors of correctional officers; managers, all other; supervisors of transportation and material moving workers; first-line supervisors of mechanics, installers, and repairers; miscellaneous life, physical, and social science technicians; other health care practitioners and technical occupations; morticians, undertakers, and funeral directors; bailiffs, correctional officers, and jailers; miscellaneous construction and related workers; industrial engineers, including health and safety; forest and conservation workers; surveyors, cartographers, and	3750, 3900, 3400, 3830, 0565, 9040, 9110, 3700, 0430, 9000, 7000, 1965, 3540, 4465, 3800, 6765, 1430, 6120, 1310, 9030, 7020, 7300, 1640, 1550, 5510, 0140, 9410, 6005, 7130, 9310, 6660, 6010, 1900, 1560, 4210, 0160, 6200, 0740

Occupational Group (as used in this report)	SOC Occupation Titles	SOC Codes	Census Occupation Titles	Census Occupation Codes
	except mechanical door; conservation scientists; environmental engineering technologists and technicians; couriers and messengers; industrial production managers; transportation inspectors; first-line supervisors of farming, fishing, and forestry workers; security and fire-alarm systems installers; captains, mates, and pilots of water vessels; construction and building inspectors; agricultural inspectors; agricultural technicians; surveying and mapping technicians; first-line supervisors of landscaping, lawn service, and groundskeeping workers; transportation, storage, and distribution managers; first-line supervisors of construction trades and extraction workers; business operations specialists, all other; first-line supervisors of law-enforcement workers; fire inspectors and investigators; animal control workers; forest and conservation technicians; bailiffs, correctional officers, and jailers; forest and conservation workers; bailiffs, correctional officers, and jailers		photogrammetrists; aircraft pilots and flight engineers; radio and telecommunications equipment installers and repairers; control and valve installers and repairers; conservation scientists and foresters; engineering technicians, except drafters; couriers and messengers; industrial production managers; transportation inspectors; first-line supervisors of farming, fishing, and forestry workers; security and fire-alarm systems installers; ship and boat captains and operators; construction and building inspectors; agricultural inspectors; agricultural and food science technicians; surveying and mapping technicians; first-line supervisors of landscaping, lawn service, and groundskeeping workers; transportation, storage, and distribution managers; first-line supervisors of construction trades and extraction workers; business operations specialists, all other	

Occupational Group (as used in this report)	SOC Occupation Titles	SOC Codes	Census Occupation Titles	Census Occupation Codes
Security Guards	security guards and gambling surveillance officers; gambling surveillance officers and gambling investigators; security guards	33-9030, 33-9031, 33-9032	security guards and gaming surveillance officers	3930
Correctional Officers	bailiffs, correctional officers, and jailers; bailiffs, correctional officers, and jailers	33-3010, 33-1011, 33-3012, 29-2042	first-line supervisors of correctional officers, bailiffs, correctional officers, and jailers	3700, 3800

Table D.2. O*Net Work Context Responses for Firefighters and Comparison Occupations

O*Net Work Context Questions	Mean Value for Municipal Firefighters	Mean Value for Firefighter Comparison Group	Mean Value for Ambulance/EMT Drivers	Mean Value for All Occupations	Difference (firefighter minus all occupations mean)
Interpersonal Relationships					
Responsible for Others' Health and Safety	4.54	4.27	4.77	3.20	1.34
Deal with Physically Aggressive People	2.69	1.72	2.51	1.54	1.14
Deal with External Customers	4.43	3.60	4.06	3.40	1.03
Public Speaking	3.06	2.28	2.35	2.25	0.81
Responsibility for Outcomes and Results	4.09	3.73	3.30	3.28	0.81
Coordinate or Lead Others	4.29	3.91	3.81	3.54	0.75
Deal with Unpleasant or Angry People	3.48	3.03	3.61	2.92	0.56
Work with Work Group or Team	4.65	4.41	4.17	4.16	0.49
Frequency of Conflict Situations	3.33	3.10	2.93	2.94	0.39
Electronic Mail	4.15	3.83	3.49	3.81	0.35
Contact with Others	4.62	4.52	4.66	4.34	0.28
Telephone	4.37	4.49	3.90	4.15	0.21
Face-to-Face Discussions	4.72	4.74	4.30	4.57	0.16
Letters and Memos	3.20	3.26	3.14	3.17	0.03
Physical Work Conditions					
Wear Specialized Protective or Safety Equipment Such as Breathing Apparatus, Safety Harness, Full Protection Suits, or Radiation Protection	3.93	2.96	1.63	1.69	2.24
In an Enclosed Vehicle or Equipment	4.38	4.03	4.10	2.24	2.14
Outdoors, Exposed to Weather	4.29	4.37	4.23	2.31	1.98
Extremely Bright or Inadequate Lighting	3.98	3.64	2.32	2.08	1.90
Exposed to Hazardous Equipment	3.99	3.71	2.69	2.19	1.80
Exposed to Hazardous Conditions	3.66	3.32	2.62	2.04	1.62
Exposed to Disease or Infections	3.37	2.03	3.89	1.82	1.55
Very Hot or Cold Temperatures	3.81	3.85	3.34	2.29	1.52

O*Net Work Context Questions	Mean Value for Municipal Firefighters	Mean Value for Firefighter Comparison Group	Mean Value for Ambulance/EMT Drivers	Mean Value for All Occupations	Difference (firefighter minus all occupations mean)
Wear Common Protective or Safety Equipment Such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets	4.45	4.49	4.26	2.95	1.51
Outdoors, Under Cover	3.24	3.23	3.56	1.78	1.46
Exposed to Contaminants	4.21	3.95	3.60	2.77	1.44
Exposed to High Places	3.07	3.13	1.69	1.63	1.43
In an Open Vehicle or Equipment	2.97	2.65	1.54	1.56	1.41
Cramped Workspace, Awkward Positions	3.38	3.26	3.39	2.02	1.36
Exposed to Whole-Body Vibration	2.61	2.34	1.52	1.36	1.25
Exposed to Minor Burns, Cuts, Bites, or Stings	3.40	3.22	2.55	2.16	1.24
Indoors, Not Environmentally Controlled	3.49	3.86	2.92	2.31	1.18
Spend Time Keeping or Regaining Balance	2.63	2.31	2.21	1.58	1.05
Sounds, Noise Levels Are Distracting or Uncomfortable	4.14	4.07	3.06	3.11	1.03
Spend Time Bending or Twisting the Body	3.28	3.06	3.44	2.29	0.99
Physical Proximity	4.23	3.90	4.61	3.41	0.82
Spend Time Kneeling, Crouching, Stooping, or Crawling	2.64	2.54	2.60	1.83	0.81
Spend Time Climbing Ladders, Scaffolds, or Poles	2.21	2.41	1.54	1.42	0.79
Exposed to Radiation	1.77	1.46	1.86	1.27	0.49
Spend Time Standing	3.55	3.54	3.04	3.07	0.48
Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls	3.76	3.93	3.84	3.34	0.42
Spend Time Walking and Running	2.91	2.89	2.76	2.50	0.41
Spend Time Making Repetitive Motions	3.10	3.03	2.98	3.04	0.06
Spend Time Sitting	2.56	2.53	3.22	3.11	–0.56
Indoors, Environmentally Controlled	3.20	3.38	2.73	3.94	–0.73
Structural Job Characteristics					
Consequence of Error	3.96	3.74	3.99	3.04	0.92
Level of Competition	3.71	3.23	3.05	3.10	0.62

O*Net Work Context Questions	Mean Value for Municipal Firefighters	Mean Value for Firefighter Comparison Group	Mean Value for Ambulance/EMT Drivers	Mean Value for All Occupations	Difference (firefighter minus all occupations mean)
Impact of Decisions on Coworkers or Company Results	4.26	4.22	4.38	3.84	0.42
Frequency of Decisionmaking	4.25	4.18	4.31	3.84	0.41
Pace Determined by Speed of Equipment	2.07	2.30	1.59	1.93	0.14
Structured Versus Unstructured Work	4.11	4.01	4.11	4.03	0.09
Importance of Repeating Same Tasks	3.30	3.36	3.86	3.24	0.06
Freedom to Make Decisions	4.14	4.22	4.08	4.12	0.02
Time Pressure	3.85	3.94	3.78	3.85	0.01
Importance of Being Exact or Accurate	4.15	4.22	4.40	4.19	–0.04
Degree of Automation	2.01	2.01	2.24	2.16	–0.15

NOTES: Mean O*Net Work context responses for firefighters and comparison groups examined in this study, as defined in Table D.1. O*Net Work context questions are scored on a scale from one to five, with five indicating that a job characteristic or work activity is frequently encountered or most important, and one indicating that the job characteristic or work activity is rarely encountered or not important. Averages for occupation groups containing multiple occupations are unweighted. Items are listed in descending order of the difference between the mean score for firefighters and the mean score for all occupations.

Table D.3. O*Net Work Context Responses for Peace Officers and Comparison Occupations

O*Net Work Context Questions	Mean Value for Peace Officers	Mean Value for Peace Officer Comparison Group	Mean Value for Security Guards	Mean Value for Prison Guards	Mean Value for All Occupations	Difference (peace officer minus all occupations mean)
Interpersonal Relationships						
Deal with Physically Aggressive People	4.04	2.21	2.37	4.18	1.54	2.50
Deal with Unpleasant or Angry People	4.67	3.48	3.47	4.74	2.92	1.75
Deal with External Customers	4.84	4.24	4.05	4.11	3.40	1.44
Frequency of Conflict Situations	4.33	3.39	3.33	4.05	2.94	1.39
Responsible for Others' Health and Safety	4.35	4.08	3.79	4.56	3.20	1.15
Letters and Memos	3.93	3.69	3.59	3.67	3.17	0.76
Telephone	4.77	4.74	4.37	4.63	4.15	0.62
Coordinate or Lead Others	4.07	3.90	3.40	4.07	3.54	0.53
Contact with Others	4.85	4.61	4.44	4.89	4.34	0.51
Work with Work Group or Team	4.64	4.41	4.22	4.70	4.16	0.48
Electronic Mail	4.23	4.46	2.38	3.73	3.81	0.42
Public Speaking	2.51	2.65	1.20	2.85	2.25	0.26
Face-to-Face Discussions	4.75	4.72	4.43	4.42	4.57	0.18
Responsibility for Outcomes and Results	3.30	3.62	3.20	3.78	3.28	0.02
Physical Work Conditions						
In an Enclosed Vehicle or Equipment	4.73	4.04	2.73	2.85	2.24	2.49
Outdoors, Exposed to Weather	4.34	4.01	3.74	2.87	2.31	2.02
Exposed to Disease or Infections	3.67	2.69	1.65	3.92	1.82	1.85
Extremely Bright or Inadequate Lighting	3.62	2.88	2.64	1.82	2.08	1.54
Very Hot or Cold Temperatures	3.73	3.30	3.06	2.36	2.29	1.44
Exposed to Hazardous Equipment	3.60	2.94	1.81	1.43	2.19	1.41
Wear Specialized Protective or Safety Equipment, Such as Breathing Apparatus, Safety Harness, Full Protection Suits, or Radiation Protection	2.84	2.09	1.22	1.37	1.69	1.15
Indoors, Not Environmentally Controlled	3.26	3.39	2.39	2.38	2.31	0.95
Exposed to Contaminants	3.70	3.54	3.08	3.07	2.77	0.93

O*Net Work Context Questions	Mean Value for Peace Officers	Mean Value for Peace Officer Comparison Group	Mean Value for Security Guards	Mean Value for Prison Guards	Mean Value for All Occupations	Difference (peace officer minus all occupations mean)
Exposed to Minor Burns, Cuts, Bites, or Stings	2.93	2.65	2.09	1.95	2.16	0.77
Exposed to Hazardous Conditions	2.76	2.64	1.51	2.20	2.04	0.72
Outdoors, Under Cover	2.49	2.81	1.98	1.85	1.78	0.70
Wear Common Protective or Safety Equipment, such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats or Life Jackets	3.59	3.83	2.84	2.87	2.95	0.64
Physical Proximity	4.01	3.74	3.72	4.20	3.41	0.60
Sounds, Noise Levels Are Distracting or Uncomfortable	3.66	3.55	2.65	3.71	3.11	0.55
Cramped Workspace, Awkward Positions	2.53	2.49	1.11	2.01	2.02	0.51
Spend Time Sitting	3.47	3.05	2.79	3.06	3.11	0.36
Spend Time Keeping or Regaining Balance	1.92	1.85	1.34	1.44	1.58	0.34
Spend Time Bending or Twisting the Body	2.51	2.46	1.80	2.32	2.29	0.22
Exposed to Radiation	1.48	1.33	1.04	1.06	1.27	0.21
Spend Time Kneeling, Crouching, Stooping, or Crawling	2.01	2.00	1.43	1.61	1.83	0.18
In an Open Vehicle or Equipment	1.70	2.01	1.43	1.26	1.56	0.15
Exposed to High Places	1.77	2.06	1.20	1.55	1.63	0.13
Spend Time Walking and Running	2.60	2.75	3.32	3.11	2.50	0.10
Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls	3.38	3.07	1.82	3.40	3.34	0.05
Spend Time Climbing Ladders, Scaffolds, or Poles	1.38	1.57	1.14	1.22	1.42	–0.04
Spend Time Standing	2.87	3.04	3.03	3.01	3.07	–0.21
Exposed to Whole-Body Vibration	1.10	1.52	1.01	1.02	1.36	–0.25
Spend Time Making Repetitive Motions	2.78	2.68	2.36	3.10	3.04	–0.26
Indoors, Environmentally Controlled	3.43	3.93	4.68	4.27	3.94	–0.51
Structural Job Characteristics						
Frequency of Decisionmaking	4.73	4.18	4.12	3.72	3.84	0.89
Impact of Decisions on Coworkers or Company Results	4.62	4.27	4.24	4.13	3.84	0.78
Consequence of Error	3.77	3.60	3.22	4.07	3.04	0.73
Importance of Repeating Same Tasks	3.73	3.45	3.87	4.24	3.24	0.50
Importance of Being Exact or Accurate	4.62	4.32	4.38	4.40	4.19	0.42

O*Net Work Context Questions	Mean Value for Peace Officers	Mean Value for Peace Officer Comparison Group	Mean Value for Security Guards	Mean Value for Prison Guards	Mean Value for All Occupations	Difference (peace officer minus all occupations mean)
Freedom to Make Decisions	4.47	4.31	4.16	4.00	4.12	0.35
Time Pressure	3.96	3.92	2.98	4.17	3.85	0.11
Structured Versus Unstructured Work	4.05	4.14	3.65	3.68	4.03	0.02
Level of Competition	2.95	3.05	3.42	2.71	3.10	–0.15
Degree of Automation	1.91	2.13	1.60	2.01	2.16	–0.26
Pace Determined by Speed of Equipment	1.26	1.68	1.22	1.63	1.93	–0.67

NOTES: Mean O*Net Work context responses for peace officers and comparison groups examined in this study, as defined in Table D.1. O*Net Work context questions are scored on a scale from one to five, with five indicating that a job characteristic or work activity is frequently encountered or most important, and one indicating that the job characteristic or work activity is rarely encountered or not important. Averages for occupation groups containing multiple occupations are unweighted. Items are listed in descending order of the difference between the mean score for firefighters and the mean score for all occupations.

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